Workbench.

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MARCH APRIL 1961

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ANNUAL BOATING
ISSUE

SAILING CATAMARAN CONVERTS TO POWER BOAT

WATER SKI RAMP

WHAT'S NEW IN OUTBOARDS

Read About the Hospitalization Policy 50 Million Families Have Been Waiting For!

NOW! HOSPITAL-MEDICAL-SURGICAL INSURANCE



WHEN SICKNESS OR ACCIDENT STRIKES YOU COLLECT GENEROUS BENEFITS All over America men

and women are realizing that with today's skyrocketing medical costs they don't have enough hospitalization insurance. Now a new kind of hospitalization insurance gives the EXTRA CASH protection you need. You get liberal benefits for doctors, hospital rooms, surgeon's fees, drugs, ambulance service, even medicine prescribed by your doctor when you are out of the hospital, PLUS another important advantage. If you stay well and don't need to use all the benefits provided by the policy you get a REFUND in CASH. Amount depends on the benefits you have already received, and length of time the policy has been in force.

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FREE GOOD BOOK

Tells 6 Features Never Before Combined In One Policy!



BANKERS LIFE & CASUALTY COMPANY Dept. 5675 4444 West Lawrence Avenue, Chicago 30, Illinois

Gentlemen: Please supply me with a copy of your new "Good News Book" and information on rates and benefits available to me under your new policy NC-701, I understand there is no charge or obligation.

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Address			
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STAY WELL AND GET CASH BACK

Isn't this exactly the kind of hospitalization policy you have always wanted? When you're sick you get cash to help pay those bills, to provide the best care, the best doctors available, but if you stay well you haven't paid out money purely for protection. Instead you get a cash refund back. You can't lose. If you need to use the money it's there to help you, if you don't, you've built a savings account of your own. Remember this new kind of hospitalization insurance, policy NC-701 is available only from Bankers Life & Casualty Company as part of the famous White Cross Plan. Write today for your FREE copy of the GOOD NEWS BOOK that gives full details on the six revolutionary advantages never before combined in one policy. No obligation of any sort.

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BANKERS LIFE & CASUALTY CO.

An Old-Line Legal Reserve Stock Company HOME OFFICE: CHICAGO 30, ILLINOIS

WORKBENCH volume 17 • number 2

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Jack Tillotson, Publisher Jay W. Hedden, Editor

E. Le Grande, Assistant Editor

B. A. Leasure, Art Director

M. Carithers, Staff Artist

M. Niblo, Editorial Assistant

M. V. Greene, Adv. Production

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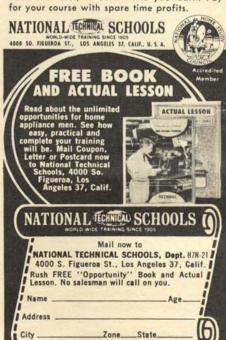


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LETTERS TO THE EDITOR

Dear Sir:

Built the forms for the Chinese planter shown in the July-August issue, but have trouble with the concrete adhering to the forms. Have tried linseed oil and motor oil, but they do not do the job. Am I leaving the forms on too long, or what would you suggest?

H.A.D., Lincoln, Neb.

Dear Mr. D:

No, you are not leaving the forms on too long. Moisture in the forms might be your problem, or you may not be leaving the forms on long enough. First, make sure the forms are thoroughly dry, then wire brush off any concrete remaining. Paint the forms on the inside with a good quality exterior-grade house paint, using about two coats. The paint should seal the wood so that oil then can be brushed over the form on the inside to prevent concrete adhering. Allow the concrete to set three or four days before removing the forms. One other item you might check: Make sure the pattern members made of hardboard are square, or are slightly narrower on the surfaces away from the form This "draft" will assure that the concrete is not "locked" onto the pattern members.

Dear Sir:

Noticed on page 22 of the Nov.-Dec. issue a chess board. I have been making chess boards for some time and enclose a snapshot of one of the several kinds I assemble and sell. I like your magazine. Am 77, retired, with a small shop of my own, Would certainly be lost without something to do, and at my age you have to make your own job.

Earl P. Jackson, Billings, Mont.

Dear Mr. Jackson:

It is unfortunate that we do not have color to show the true beauty of the contrasting woods in your chess board. The craftsmanship is excellent and I am sure you have no problem in selling all the boards you make. Making the board as a table top on folding legs is an especially appealing feature.

Dear Mr Hedden:

Your article entitled "Grounded Receptacles For Safety" on pages 40 and 41 of the Jan.-Feb. issue was read with interest. However, we noted an error in the last paragraph which we feel should be corrected before more repair shops become labeled "crooks and cheats."

The paragraph reads: "Also, keep

The paragraph reads: "Also, keep in mind that a short will not seriously affect the efficiency of an electric motor, but without proper grounding,

that short can kill you."

The major discrepancy here is the difference between an electrical short and a ground. Actually a grounded motor will appear to run normally on a two-wire, ungrounded circuit and may have full efficiency, but could pass a shock severe enough to cause death to the operator if he were grounded. A shorted motor simply would not run. If fused properly it would blow the fuse, if overfused it would either burn or cause the cord to burn. A motor that is grounded and connected to a 3-wire circuit with a ground, as you advocate, would act up the same as a shorted motor if it had a solid ground, or run hot if it had a partial ground. W. W. Braatz, Wally's Electric Shop, Sun Prairie, Wis.

Dear Mr. Braatz:

Thank you very much for the information. There is always some confusion between the terms "short," and "ground," and the latter term sometimes is stated as a "short to ground." In either case, the use of a grounded, 3-wire circuit will assure the safety of the operator. Also, as you state, the proper fuse size always should be used. If a motor causes a fuse to blow, or a circuit breaker to trip, something is wrong with the motor, not the fuse. The motor should be repaired to correct the trouble. Use of an oversize fuse simply aggravates the problem. May we also state that we have had a number of electrical motors and tools repaired at various electric-repair shops and have never found any reason to call any of them crooks or cheats. We firmly believe that the majority of such repair shops are honest, ethical and fair in their prices. Shops that are not do not stay in business very long.

Dear Mr. Hedden:

Enclosed is a snapshot of one of the grandfather clocks that I make and sell. At present I am building them in a garage, but hope to rent a regular shop soon. My clocks have an 11½ in, inside dimension at the waist which I think makes them look taller and more elegant. Use a ShopSmith to do all my work.

R. C. Beardsley, Idaho Falls, Ida.



Dear Mr. Beardsley:

Thank you for the photo and description of the clock. It indeed does look elegant. We hope to publish a story on the making of a grandfather clock one of these days; have a man working on the project now. A clock of this kind requires a lot of time and real skill to build.

Dear Sir:

May I respectfully take exception to an apparent change in editorial policy in my hitherto favorite magazine. I refer to the fact that at least ten pages in a recent issue had nothing to do with woodworking. Electronics, TV, electricity; Baaa! I work at cabinetmaking to get away from these subjects.

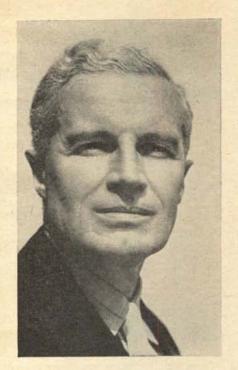
R.W.R., Los Angeles, Calif.

Dear Mr. R:

We realize that because you work in the field of electronics that these subjects are of no interest to you. However, many of us find this a fascinating subject and enjoy electronics as a hobby. We will also continue to run articles on cabinetmaking and woodworking in every issue, reporting on other subjects only when we believe them to be of interest to do-it-yourselfers.

Jay W. Hedden

Jay W. Hedden, Editor



I am printing my message in a magazine. It may come to the attention of thousands of eyes. But of all those thousands, only a few will have the vision to understand. Many may read; but of a thousand only you may have the intuition, the sensitivity, to understand that what I am writing may be intended for you-may be the tide that shapes your destiny, which, taken at the crest, carries you to a level of personal independence heretofore undreamed of.

Don't misunderstand me. There is no mysticism in this. I am not speaking of occult things; of immutable laws of nature that will sweep you to success without effort on your part. That sort of talk is rubbish! And anyone who tries to tell you that you can think your way to independence without effort is a false friend. I am too much of a realist for that. And I hope you are.

I hope you are the kind of man-if you have read this far—who knows that anything worthwhile has to be earned! I hope you have learned that there is no reward without effort. If you have learned this, then you may be ready to take the next step in the development of your karma-you may be ready to learn and use the secret I have to impart.

I Have All The Money I Need

In my own life I have gone beyond the need of money. I have it. I have gone beyond the need of gain. I have two businesses that pay me an income well above any amount. I have need for. One of these businesses is that of putting other men in business for themselves. And, I have the satisfactionthe deep satisfaction—of knowing that I have helped more than three hundred other men find independence from job worries by starting "side line" business that could be operated from the home in spare time. Since I have no need for money, the greatest sat-isfaction I get from life, is sharing my secret of personal independence with others ing them achieve the same heights of happiness that have come into my own life.

Please don't misunderstand this statement. I am not a philanthropist. Although I may help finance you in a business-like

I'd like to give this to my fellow men...

while I am still able to help!

I was young once, as you may be-today I am older. Not too old to enjoy the fruits of my work, but older in the sense of being wiser. And once I was poor, desperately poor. Today almost any man can stretch his income to make ends meet. Today. there are few who hunger for bread and shelter. But in my youth I knew the pinch of poverty; the emptiness of hunger; the cold stare of the creditor who would not take excuses for money. Today, all that is past. And behind my city house, my summer home, my Cadillacs, my Winterlong vacations and my sense of independence-behind all the wealth of cash and deep inner satisfaction that I enjoy-there is one simple secret. It is this secret that I would like to impart to you. If you are satisfied with a humdrum life of service to another master, turn this page nowread no more. If you are interested in a fuller life, free from bosses, free from worries, free from fears, read further, This message may be meant for you.

By Victor B. Mason

way, I believe that charity is something that no proud man will accept. I have never seen a man who was worth his salt who would accept something for nothing. I have never met a highly successful man whom the world respected who did not sacrifice something to gain his position. And, unless you are willing to make at least part of the effort, I'm not interested in giving you a to the achievement of your goal. Frankly, I'm going to charge you something for the information I give you. Not a lot— but enough to make me believe that you are a little above the fellows who merely wish" for success and are not willing to sacrifice something to get it.

A Fascinating and Peculiar **Business**

One of the businesses in which I have helped others get a start is a peculiar one. The unusual thing about it is that the product is needed in every little community through-out this country. But it is a business that will never be invaded by the "big fellows." It has to be handled on a local basis. No giant octopus can ever gobble up the whole thing. No big combine is ever going to destroy it. It is essentially a "one man" business that can be operated without outside help. It is a business that is good summer and winter. It is a business that is growing each year. And, it is a business that can be started on an investment so small that, with my help in financing, is within the reach of anyone.

This business has another peculiarity. It can be started at home in spare time. No risk to present job. No risk to present income. And no need to let anyone else know you are "on your own". It can be run as a spare time business for extra money. Or, as it grows to the point where it is paying as much or more than your present salary, it can be expanded into a full time business—overnight. It can give you a sense of personal independence that will free you forever from the fear of lay-off, loss of job, depressions, or economic reverses.

Are You Mechanically Inclined

While the operation of this business is partly automatic, it won't run itself. If you are to use it as a stepping stone to personal independence, you must be able to work with your hands, use such tools as hammer and screw driver, and enjoy getting into a pair of blue jeans and rolling up your sleeves. But two hours a day of manual work will keep your "factory" running 24 hours turning out a product that has a steady and ready sale in every community. A half dollar spent for raw materials can bring you six dollars in cash—six times a day—a maximum daily profit of \$33.00.

In this message I'm not going to try to tell you the entire story. There is not enough space on this page. And, I am not enough space on this page. And, I am not going to ask you to spend a penny now to learn the secret. I'll send you all the information, free. If you are interested in becoming independent, in knowing the sweet fruits of success, in becoming your own boss, send me your name. That's all. Just your name. I am not asking you for a penny at this time. I'll send you all the information about one of the most fascinating businesses you can imagine. With these facts, you will make your own investigation. You will check up on conditions in your neighborhood. You will weigh and analyze the whole proposi-tion. Then, and then only, if you decide to take the next step, I'll allow you to invest \$15.00. And even then, if you decide that your fifteen dollars has been badly invested I'll return it to you. Don't hesitate to send your name. I have no salesmen. I will merely write you a long letter and send you complete facts about one of the businesses that has now been started by more than 300 men —and several women. After that, you make the decisions. Remember, if you decide to go ahead, I'll help you finance your start.

Does Happiness Hang on Your

Don't put this off. It may be a coincidence that you are reading these words right now. Or, it may be a matter that is more deeply connected with your destiny than either of us can say. There is only one thing certain: If you have read this far you are interested in becoming independent of jobs and bosses. And if that is true, then you must take the next step. No coupon on this advertisement. If you don't think enough of your future happiness to write your name on a postcard and mail it to me, forget the whole thing. But if you think there is a destiny that shapes men's lives, send your name now. What I send you may convince you of the truth of this proverb. And what I send you now will not cost a penny, now or ever.

VICTOR B. MASON

1512 Jarvis Avenue, Suite M-6-C CHICAGO 26, ILLINOIS



keeping up with craft and home products

In communicating with companies whose products are described in this department, please mention WORKBENCH.

Candle-Making Molds



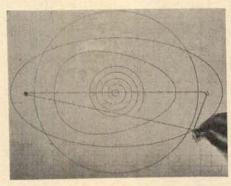
ALL-METAL MOLDS give amateur candle-making a professional touch. Cone or cylinder shape lends itself to beautiful decorative touches. Molds are \$4.85 each, ppd. Write for free catalog of supplies, facts on home-study course in candle making. Candle Institute, Dept. WBT-1, Fallbrook, Calif.

For Airplane Enthusiasts



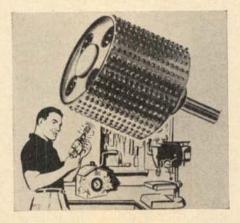
POPULAR COMMERCIAL, Air Force, Navy and light-plane models are available in miniature to be mounted on an ash tray 7 in. across, or on a trophy base with magnet on bottom. Personalizing on tray or trophy is free. Ash tray comes in black, red, yellow or turquoise; trophy in black or ivory. \$3.95 for ash tray mounting, \$2.95 for trophy. Proud Products Co., Dept. 3 GE, Box 9701, Norfolk 5, Va.

Versatile Drawing Tool



ELLIPSES, CIRCLES, OVOIDS, spirals and curves from ½ in. to 20 ft. and over can be drawn with this instrument. Based on a mathematical principle that is about 3,000 years old, the instrument is simple and well designed. Students, teachers, hobbyists, craftsmen all will find many uses for it. \$5.00 ppd. Debs Instrument and Tool Co., 103 Marks Place, Staten Island 1, New York.

Drill Accessory



FOR SHAPING, PLANING, sanding, this accessory fits any ¼-in. drill motor or drill press. Can be used on metal, wood and plastics. Cutting face is 1½ in. wide. \$2.50 plus 25 cents for postage. Bancroft's, 2170 S. Canalport Ave., Dept. 2 B, Chicago 8, Ill.

Boat Paints

EVERY BOAT OWNER needs to know about paint, remover, calking compounds and the like. A booklet, "Tips on Boat 'Paintenance,' "gives infor-

mation on the new epoxy coatings, as well as other materials. Baltimore Copper Paint, Clinton D. Carr Co., 2505 N. Charles St., Baltimore 18, Md.

Depth-Finder Kit



COMPLETELY TRANSISTORIZED depth finder for boatmen and fishermen indicates shoals, schools of fish. Operates from boat's power source or own batteries. Range is 0-120 ft., unit is all-aluminum, weighs 9 lb. As a kit, cost is \$84.50, factory-assembled unit is \$135.50. For further information write: PACO Electronics Co., Inc., 70-31 84th St., Glendale 27, Long Island, N. Y.

Rust Preventative

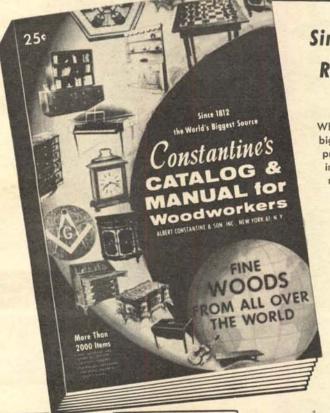


SPRAY-ON CHEMICAL goes over rusted, pitted surfaces, prevents further rust. Also used on wood and rubber, is wear-resistant. Water Skipper available at marine, auto and hardware stores. Marine and Industrial Div., Textile Adjuncts Corp., 4907 Farragut Rd., Brooklyn 3, N. Y.

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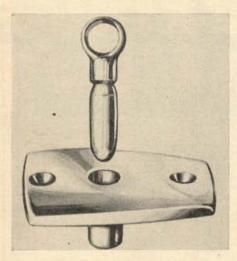
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Craft and Home Products

Flush Fender Locks



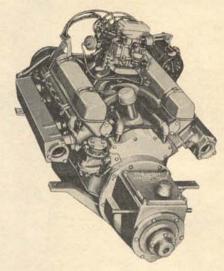
PLUG OF THIS stainless-steel item is fitted permanently to fender line, plate fits flush with gunwale or deck. Also used for bait pots, cockpit covers, quick-release lashings. \$1.25 each at marine dealers. Mfd. by Wilcox-Crittenden, Middletown, Conn.

Larson Boats For 1961



FOAM-FILLED DOUBLE HULLS are standard on cruisers and runabouts in 1961 Larson boat line, such as this Sea Lion 188. Folding-section windshield and walk-through hatch are features of 188. For information: Brunswick Boats, Little Falls, Minn.

Buick Conversion Kit



MARINE-CONVERSION KIT for Buick V8 engine features low-profile, front-drive design to permit low location of engine, minimum propeller-shaft angle. Complete information from Star Marine Engine Works, 2929 Seventh St., Berkeley 10, Calif.

Luxury Cruiser



CRUISING ACCOMMODATIONS for six are provided on this 30-ft. craft that has cabin with full carpeting, paneled bulkheads. Included are lounge, dinette, full-height private lavatory. Single or twin-engine options produce speeds to 36 m.p.h. Chris-Craft Corp., Pompano Beach, Fla.

Economy Windshield



HEAVY PLEXICLAS is formed in full wrap-around in polished-aluminum frame in this windshield, available in various heights and widths. \$26.95 and up. Write for full-color 1961 catalog showing windshields and other accessories to N. A. Taylor Co., Inc., Gloversville, N. Y.

Seamless-Hull Coating

FINISH CALLED "MFF" epoxy coating is designed for seamless aluminum, steel, fiberglass and plywood hulls. Needs no special primer, applies over new or finished surfaces. On sale at marine dealers, manufactured by Woolsey Paint and Color Co., 205 E. 42nd St., New York 17, N. Y.

Variable-Pitch Propeller



TURN OF THE DIAL produces proper pitch for any boating activity. High for speed and economy, low for skiing and heavy loads, extremely low for trolling. For most 15-75 HP motors, \$24.95 to \$32.50. Lesnor Maehr Marine Co., Inc., Dept. 40, 118 Cherry Lane, Floral Park, N. Y.

Transparent Pram



EASILY HOLDING up to 600 lbs., this 8-ft. craft weighs less than a canoe, said to have the stability of a dory. Clear butyrate hull permits easy study of marine life, selection of best fishing or skin-diving locations. For more information write Sudbury Laboratory, Dept. W, Sudbury, Mass.



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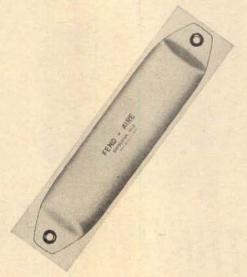
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Catamaran Trailer



DESIGNED FOR BOATS from 14 to 16 ft., this trailer with "built-in" winch handles catamarans in that size range that weigh up to 1450 lb. Called the Gator Catamaran 072, the trailer is made by Peterson Bros., Inc., 1925 East Beaver St., P. O. Box 51, Sta. G, Jacksonville 6, Fla.

Fiberglass Outboards



FORE-AND-AFT, or back-to-back seats are optional in this Ski-Fair 1468 that uses big or moderate power plant. Double bottom is filled with foam for floatation and quiet riding. Made by Cutter Boats, Little Falls, Minn.

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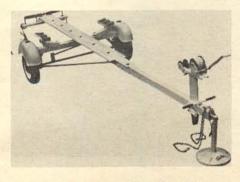
EXTREME BEAM and depth provide comfort for four pasengers, longitudinalstep hull assures fine performance for skiers. Richly upholstered seats, flat floor, fine interior finish, fiber-glass hull. "Brisbane" from Owens Fiberglass Boats, Little Falls, Minn.

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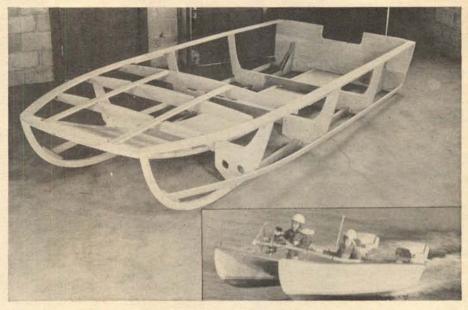
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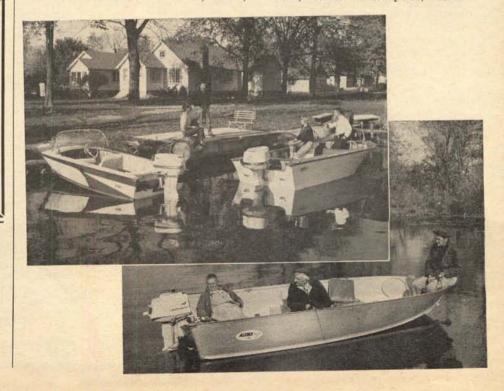
Rough-Water Cat

FOR THE KIT BUILDER who wants a hull that will handle single or dual engines up to 120 HP, this 14-ft. catamaran is the answer. Beam is 843/4 in., depth is 27 in., weight is 400 lb. Framing is mahogany and plywood. Ready-upholstered seats are available, as well as other accessories. Taft Marine Woodcraft, 636-39th Ave., N. E. Minneapolis 21, Minn.

14-Ft. Fishing Boat

ANSWERING THE DEMAND for a wide, deep, steady fishing and cottage boat, Kodiak 14-footer, lower photo, has wide, flared clipper bow to insure dry, spray-free performance in all weather. Beam is 5 ft., 5 in.,

transom is 60 in., maximum depth is 28 in. Rated by O.B.C. for 45 HP, the boat is fast and maneuverable. Upper photo, other boats in line. Aluma Craft Boat Co., 1515 Central Ave., N. E. Minneapolis, Minn.



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Fishing Is Fun

EVEN TODDLERS HAVE great fun fishing. You have to watch them to make sure a fish doesn't pull them in, but a life jacket is a must in a situation like this. When out in a boat check the very young and the non-swimmers to make sure they are wearing life jackets. This simple precaution will assure a carefree trip.



Fiber-Glass Sailboat



ALMOST AS FAST AS THE WIND that drives her, this 16-ft. sailboat weighs only 286 lb., has a beam of 5 ft. Cottontail has been clocked at nearly 20 knots, carries 140 sq. ft. of mainsail, also flies a parachute spinnaker of 150 sq. ft. Spars are lightweight, anodized aluminum. Built by Holiday Yachts, Inc., Centerport, Long Island, N. Y.



Tiki Catamaran



1. Even in a light breeze the Tiki moves along well, is easily maneuverable. In winds of 18 knots, with gusts to 25 knots, she remains level, does not get skittish and unmanageable. Under power she moves briskly, turns flat and smooth.

CARRYING 139 SQ. FT. OF SAIL, this 12-ft. twin-hulled craft, Fig. 1 and the cover, will outsail anything near her size. She has been clocked at 81/2 knots under winds of 12 to 15 knots. Removing mast, boom and sails and clamping a motor on the transom-all of which takes only minutes-converts the craft to a power boat that can pull a water skier. A 23-HP outboard motor will produce 18 m.p.h. with two persons aboard and a skier in tow. When used simply as a power boat, there is ample room for four adults in the 5 x 6-ft. cockpit. Optional folding seats can provide comfortable seating for all. The seats fit into cleats on the cockpit deck, can be removed in moments and stored in one of the hulls, Fig. 9. Hatches in the cockpit deck provide handy access to the hulls where there is enough storage space for even such bulky items as water skis.

The generous cockpit area, plus the unusual stability provided by the two hulls, makes the Tiki an ideal platform for skin diving, for fishing or just plain swimming. As can be noted in Figs. 6 and 8, there is storage space under the foredeck for gear being used at the moment, but which is not wanted underfoot.

For hunters and fishermen who travel into their favorite campsites by water, the Tiki has another optional feature that was designed with them in mind. This is a camping shelter, Figs. 10, 11 and 12, that is waterproof, airy and mosquito-proof. When "knocked-down" the shelter is stowed in the hulls. It can, however, be left in place when the boat is being trailed, so that you have a camping-trailer setup. A couple of sleeping bags stowed aboard can be rolled out on the deck to provide sleeping accommodations for two.

The best feature of Tiki, as far as WORKBENCH readers are concerned, is that it is available as a kit, as well as a completed boat. In the foreground in Fig. 2 are shown all the parts of the kit. In the background is a completed boat on a trailer; it also has the optional camping shelter. Hulls of the Tiki are fiberglass, finished smoothly with a white color impregnated in the material. All hardware is stainless steel, bronze or brass and of first quality. The mast and boom are of hollow aluminum construction with streamlined cross section. The mast has an integral bolt rope groove and internal halyard provisions, the boom has a roller-reefing gooseneck. The sails are cut from 5-oz. Dacron, have full-length battens of

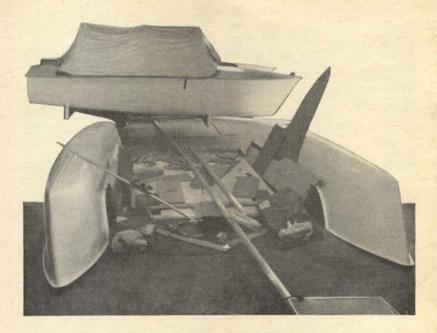


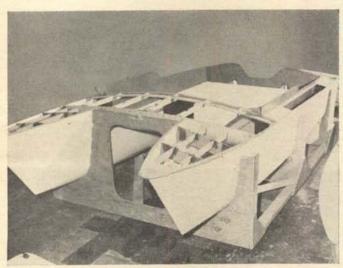
2. Boat in background is completed craft, fitted with camping shelter. In foreground are the many parts provided in the kit. All material is top quality, all is guaranteed satisfactory.

clear ash or white oak. The deck of the cockpit is a molded fiberglass-balsa-hardwood sandwich that provides floatation and load distribution for the whole boat. The centerboard (removed when the boat is used with power), and the twin rudders are polished metal. The transom is 14-ply mahogany-faced fir plywood designed to support

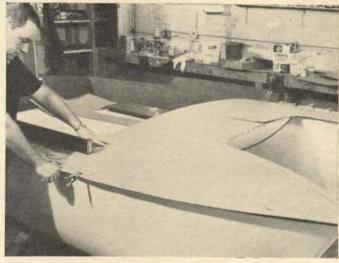
an outboard motor of up to 25 H.P.

Not supplied with the kit is a jig, necessary to align the hulls when the boat is assembled. Full instructions and dimensions, however, are included with the kit. The jig in Fig. 3, used at the factory, is similar to the type that a kit builder would assemble. In Figs. 4 and 5 is shown the method of attaching the foredeck. (While the material shown is tempered hardboard, there since has been a change to rigid sheet plastic.) The decking is cemented to the lips of the hull,





3. Shown is jig used in factory for positioning hulls. Similar jig must be built by the kit buyer, to properly locate hulls to accept all structural components of the boat. Cockpit assembly has been installed here.

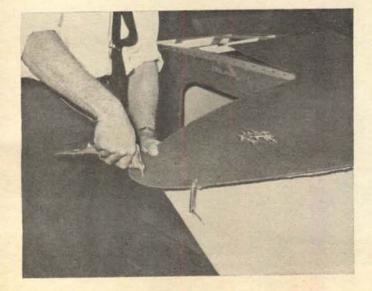


4. Material on forward decks is bonded with fiberglass resin, then held in place with clamps. Note that short lengths of aluminum angle have been cemented to clamps for greater clamping area.

then is riveted with "Pop" rivets. We found the rivets and the rivet-installing tool of such interest that we will run a separate story on this tool in a future issue. Fiberglass resin, used as a cement between the hulls and decking, is not supplied with the kit and must be obtained locally. Whatever brand resin is used, follow the manufacturer's instructions for best results.

We personally tested the boat under power and sail and checked over all items in the kit. All material is top quality, parts are precision cut. With the aid of a friend the Tiki could be assembled in just a few weekends. While many of the operations can be done by one man, such as installing the bumper, or rub rail, Fig. 7, larger pieces could be handled more easily by two.

The extreme beam of the Tiki is just 6 ft. 4 in. so that it can be carried on a trailer easily. The twin hulls will require modification of most trail-



5. After bonding and clamping, decking is fastened to lips of fiberglass hulls with "Pop" rivets. Tool can be rented or purchased from company. (Tool story will be in future issue.)



6. After resin has set, edges of deck are cut with jig saw and smoothed with sander. Alternate method is to trim edges with portable router. Minimum of power tools are required to assemble kit; those required could be borrowed or rented, but most home-shop owners will have them already.

ers, or a special trailer for the Tiki can be purchased to permit hauling the boat at turnpike speeds of 70 m.p.h. While certain design compromises have been made to produce a boat versatile enough to be powered by sails or an outboard motor, the Tiki is so well engineered that none of the compromises effect the performance of the boat whether under power or sail.

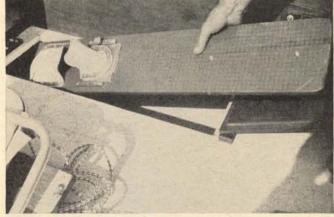
Considering the small size of the boat, its generous passenger capacity in the large, self-bailing cockpit, its high sailing speed and its agility under power we consider it an ideal family boat. For more details write: Catamaran Corp. of America, 2324 Summit St., Kansas City 8, Mo. \triangle \triangle



7. After all decking has been fastened in place a bumper rail is fitted completely around the boat at angles between decks and sides of hulls. Bumper material is provided in kit.



 Gasket is slipped under spray rail, then it is fitted in place on the forward deck, attached to block at center and to coamings at the sides.
 All fasteners and hardware are stainless steel, bronze or brass.



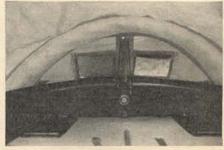
Hatch on each side of cockpit deck provide access to insides of hulls.
 Even water skis can be fitted through hatches into this handy storage space; fine for fishing equipment and camping gear.



 Optional camping shelter quickly fastens in place, does not use boom. Cockpit area is large enough to comfortably sleep two people.



11. Slide fastener closes opening of shelter against weather, or insect netting can be closed, as here, for ventilation.



12. Two net-covered "windows" at front of shelter can be closed against the weather with canvas flaps, same as at rear.

Youngsters are born explorers. When they have the use of a boat they can reach areas that are not easily approached by other means of transportation. They must know safe boating.

TEACHING YOUNGSTERS TO HANDLE A BOAT



HOW OLD SHOULD A BOY OR GIRL be before they can handle a boat alone, and what should they know? It is estimated that more than 3 million youngsters in the 10 to 19-age group operated outboard-powered boats in this country last year, and it is predicted that this number will jump sharply in the next few years.

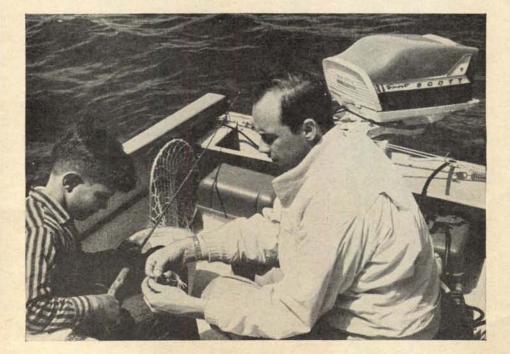
Whether or not your child should be allowed to operate a boat seems to depend on the attitude and experience of the individual youngster and on how he has been instructed. While many boys and girls of 8 or 9 operate their own small boats with low-power motors on sheltered waters, there may be teenagers who lack the judgment and skill to handle a fast boat safely. A boat driven recklessly is just as deadly as an automobile; a youngster who is a poor or careless car driver will do no better with a boat.

Some of the fundamentals every outboard boat handler, young or old, should know are: How to board and move about in a boat—step into the center or come over the bow, keep low and hold onto both gunwales. How to steer—keep in mind that a boat steers from the stern, not the

bow. How to approach or leave a dock—come in against the wind or current, use the motor to swing the stern clear when leaving. How to moor securely, including knowing how to tie simple knots and hitches. A boater should know the "rules of the road," such as which of two passing boats has right of way. The operator should know how to handle fuel safely, and what to do for minor difficulties such as replacing a sheared propeller pin. Every boat should have proper equipment, such as life preservers, anchor, paddle or oars, reserve fuel, lights and horn or whistle and a fire extinguisher. A youngster should be taught

A youngster should be taught safety: Don't overload a boat, distribute the load evenly from side to side and bow to stern, and operate at safe speeds; avoid sudden, sharp changes in course that might throw a passenger overboard. Courtesy and common sense are almost synonymous, whether driving a car or a boat. If you teach these two things to your youngster, you will have little worry about them handling a boat.

Boat-handling instruction is offered in many communities by local boating clubs and marine dealers, as well as by the U. S. Coast Guard Auxiliary, U. S. Power Squadrons and groups such as boys' clubs, Y.M.C.A.'s and the Boy Scouts. \triangle



Many a father and son have been brought closer together by sharing the relaxation and excitement to be found in fishing. On these fishing trips Dad can teach his son safe boating habits, show him how to handle a boat, demonstrate the limitations and hazards that exist with any craft on water.



Fun for everyone goes along in the boat. Skis and a beach ball are for the active youngsters, an ice chest full of food is for all. The swim fins and masks can be used by each for a look under the surface.

Family Fun On The Water



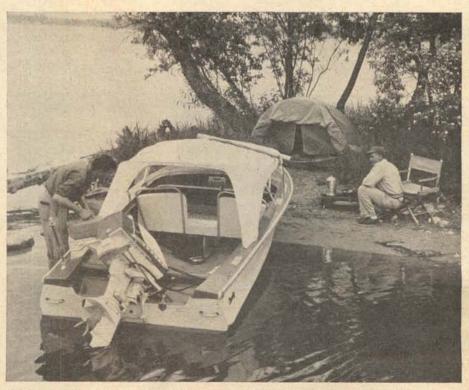
From a boat the photographer gets new angles, with a full sweep of scenery open to his camera. Here it is a quiet, wooded shore line; it also could be a thunderous surf on a rocky coast or sweeping waves on a wide, sandy beach.

Where else but on a boat could you be sure of no overhead wires or trees when flying a kite? You can't use a paper kite, of course, in case it drops in the water; this one is plastic and completely waterproof.



NO OTHER LEISURE-TIME ACTIVITY lends itself so well to family fun as boating. Whatever an individual's interest,—picknicking, exploring, fishing, photography, skin-diving, even kiteflying—, it can be done better with a boat. You can picnic in out-of-the-

way spots, miles from the nearest highway. You can explore areas not easily reached from the land side, both along the shore, and under the water with a skin-diving rig. Make sure your boat is big enough and fast enough for family activities. \triangle \triangle



This roomy runabout with a 60-HP outboard motor makes an ideal rig for campers. It has plenty of space on board for stowing bulky gear, such as tents and chairs, as well as fishing gear. The motor is big enough to get the boat out to the fishing spots fast, the top protects from hot sun or heavy rains.





What could be more fun than finding your own souvenirs on the bottom of lake or ocean? In addition to fins and a mask, a mouthpiece and air tank are required for more extensive underwater exploration.

After beaching their 16-ft. hardtop runabout this trio is enjoying lunch at their favorite picnic spot. Cars and dust are miles away from here.

> Your choice of picnic spots is endless when you have a boat; you even can eat aboard, with the aid of a gasoline stove or portable barbecue and a suitable-size ice chest.



A houseboat offers the most for the money, providing yacht-like accommodations at small-boat prices. Most feature full headroom throughout, bottled-gas stove and refrigerator, big sundeck and plenty of room for the family. A sailboat or motorboat can be towed or carried along for skiing or exploring.



Water skiing is an exciting and exhilarating sport that is learned easily by people of all ages. Your boat must be fast enough, should have hitch for tow rope. Special ski hitch is shown.





 Skier has crossed wake from right to left, now is getting ready to cross to opposite side.
 Note relaxed left leg, right leg extended, which keeps skier far to left of boat, so she can cross wake at almost right angles, which is easiest way.

How To Water Ski

SCOTT MORGAN



2. A snug-fitting ski binding is important. Be sure it fits correctly and is adjusted properly before starting to ski. While the binding must be snug, it must not be too tight or it will cramp your feet and make it difficult to discard the skis when you fall.



3. To place your skis on the water when you want to start from a dock, put on the skis, then sit down and roll on one hip to get the skis on the water while you are in sitting position on the edge of the dock. Starting from dock will keep you dry.



4. Instructor shows the student how to hold tow bar in one hand, with rope coiled loosely in other, ready to pay it out as tow boat moves slowly away from the dock. Tips of skis should be raised slightly.



5. As tow rope is pulled taut, skier is pulled cleanly off the dock by the boat, with skis already planing. Note flexed knees, that help absorb shock of tow. Life belt or jacket is a must for anyone on water skis.

FOR A BEGINNER, the toughest part of water skiing is getting up on the skis in the water, Fig. 6. The rest is easy; good form, endurance and learning stunts is a matter of practice and perseverance. The conventional method of learning to water ski starts with dry-land instruction from a friend who is a proficient skier, or from a professional instructor, Fig. 7. This instruction involves getting into a pair of skis, sitting on them with the tow-rope handle held firmly and the arms extended. Someone then grasps the tow rope and pulls you upright, while the skis are held in position. This is done several times, keeping knees bent, arms straight and body leaning forward slightly. After this you take your skis out to water about 21/2 ft. deep, slip them on, grasp the tow bar and angle the skis so the tips are above water. You signal the boat to start. The boat should give you a fairly fast, steady pull. When all the slack is out of the rope, allow vourself to be brought slowly to a standing position, as practiced on the beach. Keep four foundamentals in mind: Flex the knees, keep arms straight, hang on and keep your balance, let the boat do the work. A fifth factor is equipment; to ski well use skis of the correct size for your weight and the power of the towing boat. The chart at the end of this article will help your selection.

Starting from a dock is preferred by many competition skiers, and by some instructors for students. This kind of start eliminates the chance



6. Here boat is being maneuvered into position to begin run, while skier gets ready for shallowwater start. Note that ski tips are held above water, as evenly as possible, with arms and legs held out straight.

Boat HP



7. Instructor Nancy Rideout shows students the proper way to flex knees to absorb shock of passing over rough water and to aid in maintaining balance. Dry-land instruction is used to prepare students for solo run on the water.

of floundering in the water, with skis going in the wrong direction, as can happen with a water start. For a dock start the skis are put on and adjusted while the skier is on the dock, Fig. 2. Bindings should be wetted so the feet slide into them easily. Next, the skier walks to the edge of the dock and sits down. For this maneuver it is necessary to roll over on one hip, Fig. 3, so the skis can be swung over the edge of the dock. Skis are rested lightly on the water, the slack of the tow rope is held in one hand, the tow-rope handle in the other, Fig. 4. As the boat moves away, the coil of rope is paid out until only 6 or 8 ft. remain in the coil. Now the skier shouts, "Hit it!" The boat accelerates immediately, and the skier leans back slightly at the moment the rope becomes taut and is pulled off the dock onto his skis, Fig. 5. Steering is easy: To go to the right, relax your knees, push slightly with your left leg and lean the body to the right. Do the opposite to go left. Cross a boat's wake as close to right angles as possible. Pull far to one side of the wake, Fig. 1, which makes it easier to make a right-angle crossing.

And always, always, wear a life jacket or belt when skiing. Also be sure both you and the boat driver understand hand signals, Fig. 8. \triangle \triangle



SKI SELECTOR CHART (Ski length is minimum required.)
Skier's Weight in Lbs.

	70-100	100-130	130-150	150-170	170-195	195-250	2 SKIERS
15-20	5 ft.	5½ ft.	6 ft.	exp'd skier	not practical	not practical	not practical
21-30	4½ ft.	5 ft.	5½ ft.	6 ft.	6 ft.	exp'd skier	6 ft.
31-40	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.	exp'd skier	5½ ft.
Over 40	4 ft.	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.	5 ft.



Lines made of nylon and "Dacron" fiber are stronger, tougher and longer lasting than those made of natural fibers. They also are smoother, absorb very little water, can be stored wet.

KNOW YOUR ROPES



Nylon is superior in abrasion-resistance over natural fibers. Surface of nylon may rough up, does not indicate unusual wear.



This fact-filled booklet about ropes of synthetic and natural fibers and their uses is 25 cents.

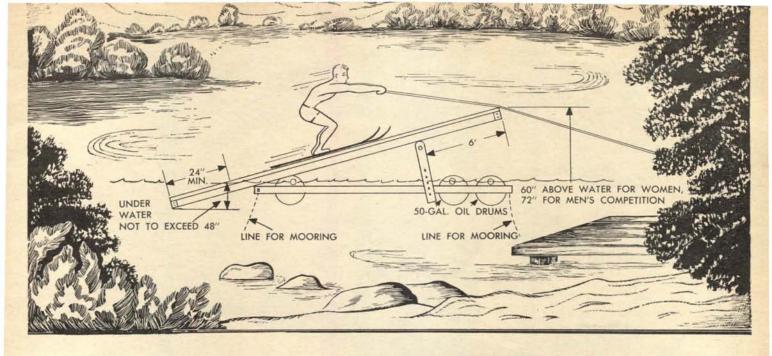


Nylon lines are splinter-free and smooth to the touch. More flexible than ordinary rope, they coil into half the space and weigh only half as much making them easier and faster to handle.



Nylon absorbs eight times as much energy, last three to five times as long as natural fibers. Synthetic lines can be stowed wet without damage from rot or mildew.

AN INCREASING NUMBER of experienced boatmen are recommending the use of lines made of synthetic materials. While synthetic lines are comparatively new, they have quickly proved their superiority for many applications. Nylon, for example, has more than twice the strength of manila lines. Also, nylon lines have been stretched 40 per cent of their length without breaking. Where lines of less elasticity are required, as for the running rigging on a sailboat, another synthetic, "Dacron," can be used. Ropes made of synthetic fibers are smooth, easy on the hands, light and flexible and absorb very little water. Synthetic lines are more expensive, but have longer life and provide an added margin of safety. For more information on these synthetic lines, as well as those made of natural fibers, we suggest you send 25 cents to the Columbian Rope Co., Auburn, N. Y. for their booklet "Know Your Ropes for Better Boating." It also contains information on tying knots, mooring boats and other useful data. \triangle \triangle

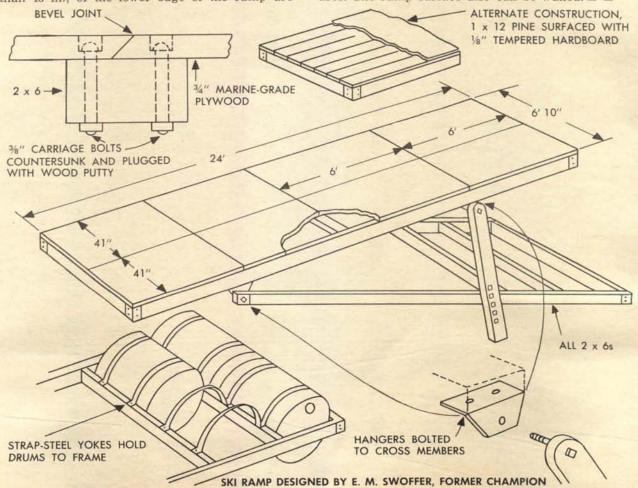


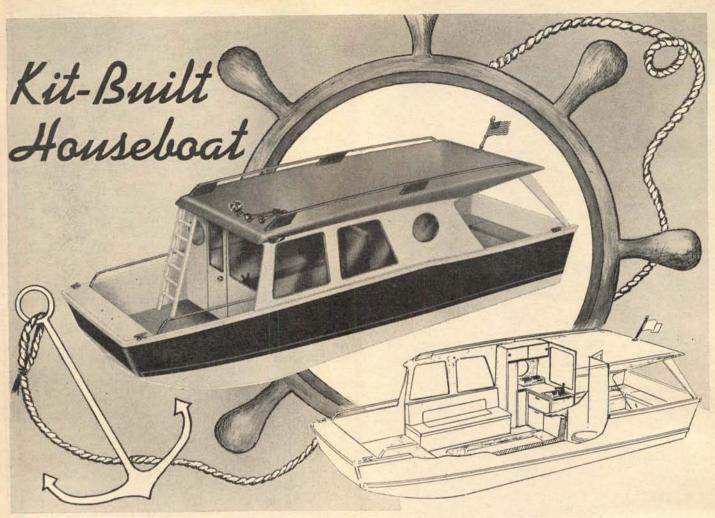
Competition Water-Ski Ramp

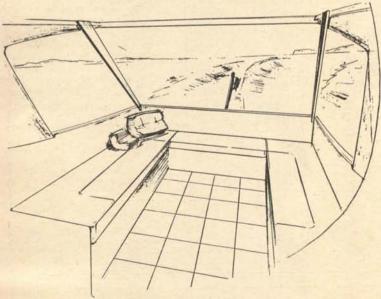
HI SIBLEY

AFTER MASTERING THE SKILLS of skiing on water, your next step is to take to the air. This ramp is dimensioned for official competition, and can be lowered in the water for the beginner by partly filling the oil drums with water. As his skill grows the skier can raise the ramp by pumping out the water. Make sure that at least 24 in., and no more than 48 in., of the lower edge of the ramp are

under water. Marine-grade plywood is suggested, but solid lumber, even metal, has been used for the ramp surface. One surface, as illustrated, consists of $\frac{1}{6}$ -in, tempered hardboard over a base of 1-in, lumber. Keep the ramp wet when in use. After the first wetting-down, skiers will keep the ramp wet if not too long a time lapses between uses. The ramp surface also can be waxed. \triangle

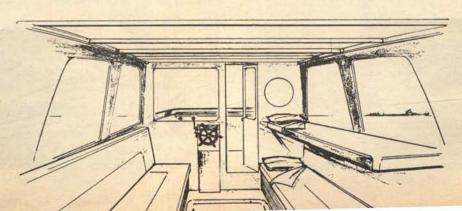






24 « WORKBENCH

CONSTRUCTED ENTIRELY OF MARINE PLYWOOD, and designed so that almost any one can build it from the kit, this 22-ft. houseboat has an enclosed toilet space, galley, plus two full-length double bunks in the cabin that will sleep four. The seats in the rear cockpit will sleep two more. Both the cabin and rear cockpit have 6 ft. 4 in. headroom. The boat has an open cockpit forward, a large enclosed cockpit aft and a spacious sundeck above the cabin. Sides of the stern cockpit can be enclosed with a canvas cover that has windows. The boat has a V-bottom, and is slightly less than 8 ft. wide, so that it can be hauled on a trailer on the highway. Without accessories, (lights, bunk cushions, stove, toilet, window glass, paint, etc.), the kit sells for \$699.00. This price includes all wood parts and screws required to assemble the boat as illustrated. From Luger Industries, 9200 Access Rd., Minneapolis 20, Minn. △





Sunfish Sailboat

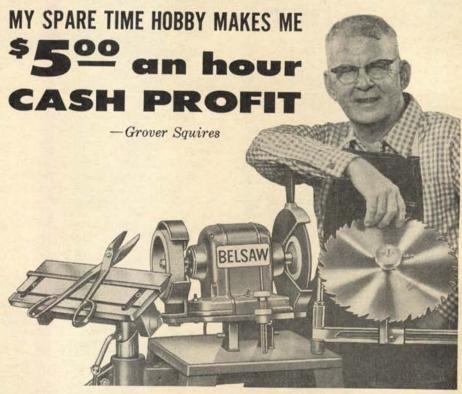
ONLY HAND TOOLS are needed to assemble the Sunfish from a kit. Its pontoon-type hull makes it practically unsinkable, its light weight lets it run before even the faintest breeze. White cotton sails are included with the kit, but nylon may be substituted at small additional cost. For more information write: Alcort, Inc., Box 1345, Waterbury, Conn.

Yacht Chairs

SLIP-ON SEAT AND BACK of these chairs are readily removed for cleaning. Frames are hardwood, all hardware is chrome on brass. White-rubber tips are on all four legs and at top of back posts. Aluminum furniture also available. For catalog write: Telescope Folding Furniture Co., Granville, N. Y.



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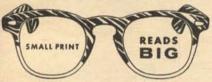
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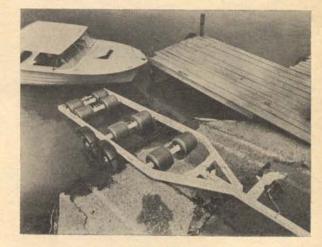
Air-Cushion Boat Trailer



Matching hull configuration is no problem for the inflated rollers on the Hull-Gard trailer. Each roller is inflated, by hand pump or at a service station, to pressures from 2 to 4 lb.

INFLATED NEOPRENE-AND-NYLON rollers 1 ft. long and 14 in. in diameter are used to support boat hulls on a unique new trailer. About 100 sq. in. of cushioning support is provided by each roller when filled with from 2 to 4 lbs. of air. A low-silhouette winch mounting allows sailboats with their longer bows to come farther forward before snugging into the bow chock on the trailer. Pre-drilled holes in the trailer frames allow the installation of another axle when the boatman moves up to a larger craft: other accessories permit upgrading the trailer to match larger boats.

Clearly shown here are the inflated rollers on one of the larger models. Note also the two axles, the holes in the tonque that permit moving the winch mount forward or back to accommodate boat.





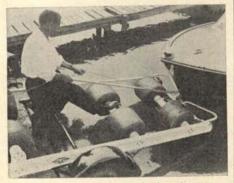
Quickly attached cargo body provides year-around use for the owner of a Hull-Gard trailer. Sheet-steel body folds compactly for storage in basement or garage when it is not used.



moves smoothly inflated rollers. over (called Rollaires), on Peerless models of Hull-Gard trailers, to enter the water.

A sheet-steel utility body readily fastens on the frame for carrying cargo, or for use with a canvas top as a camping trailer. The body weighs just 50 lb., will carry 500 lb. For storage the sheet-metal unit folds flat. Stake sides can be added to increase volume capacity.

Tilt frames are provided on all models of the trailer to permit a boat to be rolled off or pulled on without need of water immersion. Some models are fitted with solidrubber rollers that are longer than average, and which can be adjusted by a leverage system to match the shape of a boat hull. Hull-Gard trailers by Dana Corp., Parish Pressed Steel Div., Reading, Pa. A A



Man is using boat hook, standard equipment on Peerless model, to guide boat to trailer, align it with the winch line to pull it aboard.



Carrying only 2 to 4 lb., Rollaires provide firm support for boat hulls, eliminate problems of damage, scuffing, strain on hull.



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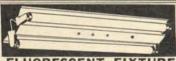


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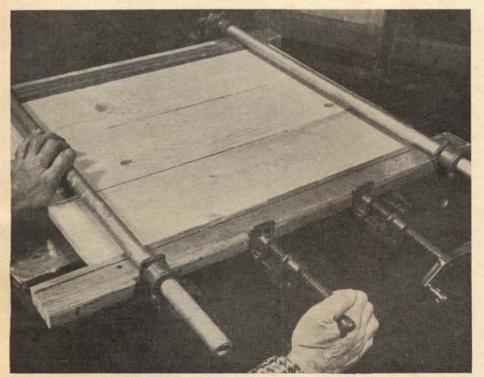
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Top and sides of the chest are made by edge-gluing lengths of 1 x 4 or 1 x 6. If you do not have long bar clamps, now is a good time to pick up a couple of pairs of clamp fixtures.

DOWER CHEST

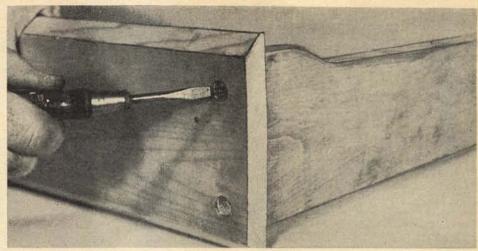
CONSIDERED AS A CHEST OF DRAWERS hardly taller than a wall bench, this piece of furniture might seem to be an impractical item. Actually, as a modern version of a dower chest it is a dual-purpose unit that is ideal for a den, recreation room, family room or bedroom.

In an informal room the lowboy cabinet is valuable as a serving table, or even for extra seating. In the bedroom it becomes a luggage rack, in addition to its general purpose as a bench or low table. The three drawers provide a bonus of extra storage space no matter where the chest is located.

All exposed surfaces of the chest; sides, top, back rail and drawer fronts, are made of select-quality, white Ponderosa pine. Drawer supports are cut from 1 x 3 clear pine stock. Both the sides and the top of the chest are made of lengths of 1 x 4 or 1 x 6 lumber edge-glued as indicated. For the sides 36-in. lengths can be made up, then sawed in half to produce pieces 17 x 18 in. The chest top measures 16¼ x 30 in. Note that the front, upper corners of the sides are rounded. Neither splines nor dowels are required in the edge-gluing operation, as both the sides and the top are supported in the assembly.

For the drawer supports, which make up the frame of the chest, six pieces 17 in. long are required for the ends. Six more lengths are required for the cross rails, of a length that will equal 30 in. when joined to the end pieces. The lengths of the cross rails will vary, depending on the method used to join them to the end pieces, and also on whether or not the end pieces are set into dadoes cut into the sides. The most reliable joint is the mortise and tenon, which can be cut on a table or radial-arm saw. The mortises are simply grooves cut slightly wider than the width of the cross rails, to accept the tenons. The latter are made by cutting a rabbet on the tops and bottoms of the ends of the cross rails. Another method of joining the frame members is with two short lengths of dowel at each joint.

Install the cabinet top 1 in. below the top edges of the sides. If the frame members have been set

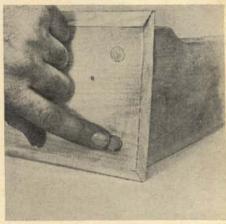


Upper and lower edges of the drawer fronts are cut on 45-deg. angle, ends are left straight. Screws that attach fronts to sides are fitted in counterbored holes. Drawer sides are cut down.

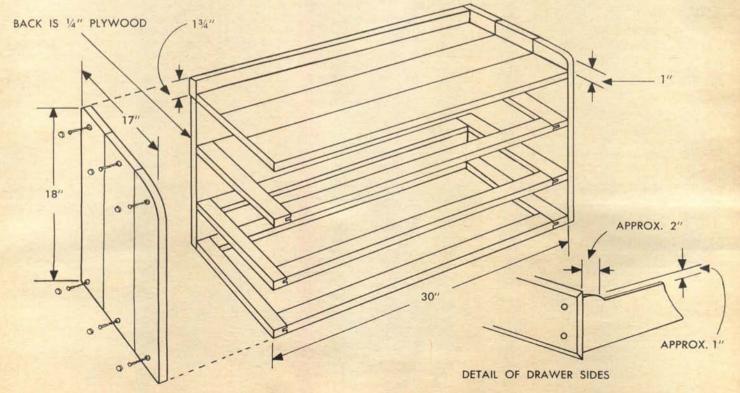
into dadoes, one also is required for the top. The back strip is fastened to the sides and the back edge of the top with screws. A sheet of ¼-in. plywod is cut and nailed to the sides and the top strip to provide a dust-tight back.

The drawers are cut and made to fit the frame spaces, the drawer fronts being made to extend over the side edges and the frame rails. The upper and lower edges of the drawer fronts are beveled about 45 deg., and the drawer sides are shortened about 1 in., at a point 2 in. back.

Dowel plugs used to fill the counterbored screw holes in the drawer fronts are stained a dark color to contrast with the rest of the chest which is sanded and given two coats of clear shellac. \triangle



Counterbored screw holes are filled with short lengths of dowel. Dowels then are stained a dark color. Use dark-colored hardware.



Corner Desks

WARNER BENSON



Corner desks can be made of a variety of materials, and in an infinite number of styles: Self-supporting, free-standing, or both.

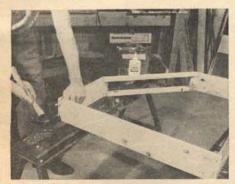
WHERE STANDARD-SIZE, rectangular-shape desks will not fit, corner desks often will. Such desks can be made of surfaced plywood, given a stained finish and used in a living room. The lady is using such a desk. Where a unit receives rougher service, as in a boy's room, second-grade lumber and hardboard can be utilized. In the boy's room the desk is free-standing to completely utilize floor space. No attempt was made to hide the rough lumber of the frame, as a cabinet is to be built alongside the

desk. In still another area of the home a self-supporting desk is required, Fig. 6, and is made with a hardboard top, and sides fitted over a frame of 1 x 2s. The back corner of the desk is supported on a length of straight-grained 1 x 4.

Fig. 4 shows the dimensions and construction of a "living-room type" desk. With slight modifications, this plan can be used for all types of corner desks. The desk in Fig. 4 does not have reinforcing strips at the top of the frame, as has the

desk in Figs. 2 and 5. Hardboard is used for the top of the latter two desks, and this thin material requires added support. The plywood used in the living-room desk is rigid enough without added support. Note in the drawing that one side member of the desk-top frame is shorter by the thickness of the wood than the other, because of the butt joint.

Because the corners in most rooms are not absolutely square, leave a slight overhang on the desk top, Fig. 3, and fit it to a particular corner.



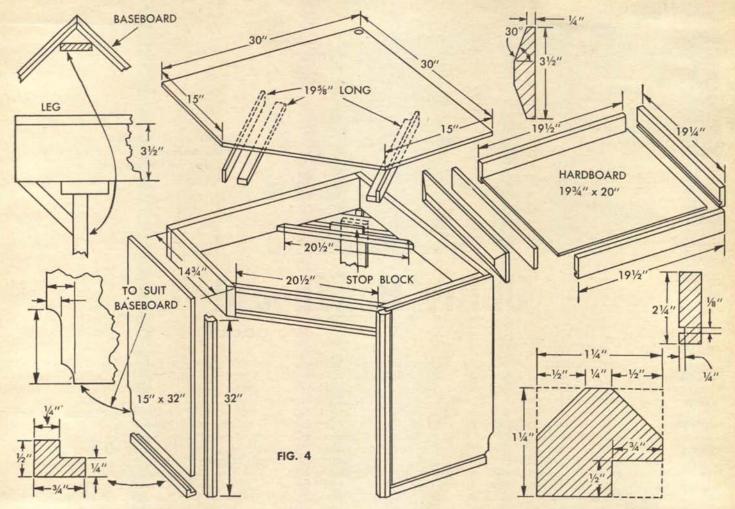
1. One of several methods of joining the frame corners utilizes nails, plus dowels glued in place. Glue blocks also can be used inside each corner.



Reinforcing framework is nailed and glued in place, drawer has been assembled and is being fitted. Drawer face has not yet been installed.



 Hardboard top is cut to rough shape, then trimmed to fit. Rough lumber is used for all desk framework; only drawer front shows.



Where a desk is wall-hung, a trim strip can be fitted on the desk top against the wall. The trim strips for the front edges of the desk in Fig. 4 were sawed from a piece of stock, but any trim or cove can be used by cutting a rabbet to fit over the desk edges as indicated.

To start construction, cut the two longer back pieces, then the two shorter pieces that have a 45-deg. cut on the front edges. Square up the corners, then measure across the front opening and cut lengths of ½ x ½ to fit. An identical length of ½ x ½ is fitted parallel across the back corner of the frame. Two strips of ½ x 1-in. stock are fitted between these parallel members as drawer



 Bevel-edge drawer front is positioned, then is glued and screws are driven from inside drawer. Here drawer front is made long enough to lap over sides when attached.

runners. Strips of ¼-in. plywood are nailed to the runners to keep the drawer in alignment. A stop block on the back strip positions the drawer front-to-back. A length of 1 x 4 is nailed to the underside of the frame near the back to support the rear leg. It is positioned to clear the base-

board. The drawer is made as dimensioned, then the front is added. It can be beveled, as shown in Figs. 5 and 6, or flat as in the lead photo. Corners of the desk frame can be joined with dowels, Fig. 1, with glue blocks, Figs. 2 and 5 or by any method preferred. \triangle \triangle



6. Top of this style is 1/8-in. hardboard. Sides also are cut from hardboard, fitted over 1 x 2 frame. Note that sides are notched to fit over a baseboard.



Comfort, convenience, communication are provided by this handsome headboard.

Utility Headboard

NED CHARLES

INDIVIDUAL LIGHTS WITH SEPARATE SWITCHES, a clock-radio and a telephone are reached easily on this headboard, as are the individual controls for an electric blanket. Medicines and other personal items are stored in the cabinet where they are concealed by the sliding doors. Silent mercury switches are used to control the lights. assuring that a husband or wife does not disturb their sleeping spouse with a loud click when turning the light on or off. Cords of the blanket controls and the radio pass through an opening in the shelf and are plugged into a duplex receptacle fitted in the bottom of the cabinet. The lights on the top of the headboard are wired through the switches, as indicated, and the wire is run to the receptacle box. This permits the use of a single extension from the headboard, which is plugged into a wall receptacle.

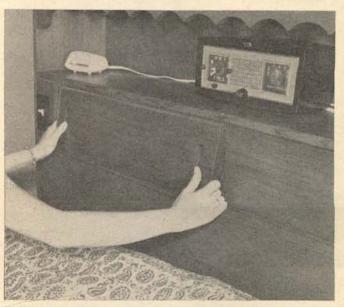
A unique feature of this headboard is the pivoting back of the shelf, Fig. 2. Two dowels are pulled to release the back, which then can be pivoted upward. This back permits putting the telephone in from the back, the wire being fitted in a slot cut in the back.

The flat wires from the blanket controls to the blanket also are fitted between the shelf and the pivoting back, so that no unsightly wires show from the front. Doors on the cabinet are the sliding type, that both conserve space and prevent bumped heads. Grooves for the top of the door are deeper than those at the bottom, which permits easy removal of the doors, Fig. 3, to simplify cleaning the cabinet. Two wood strips are screwed near the lower edges of the headboard sides, then bolted to the legs of the bed frame as indicated.

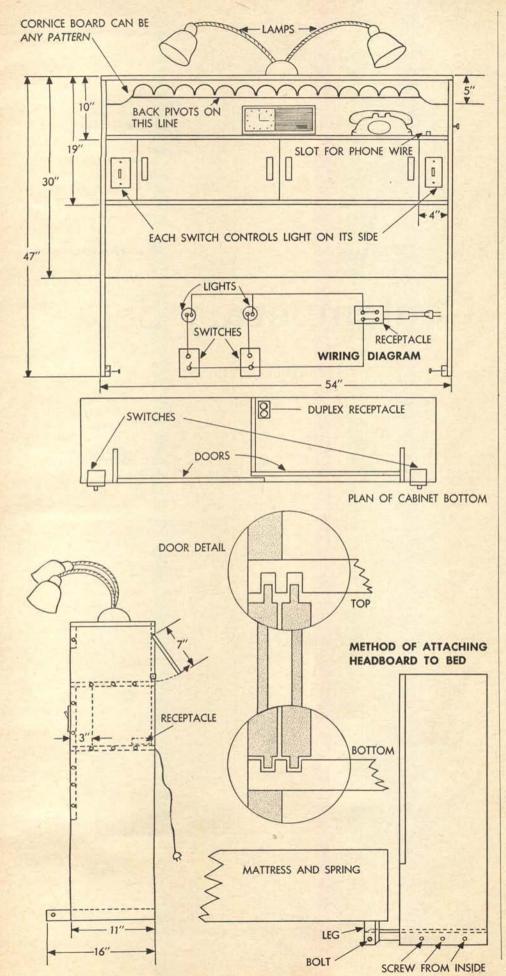
Dimensions given for the headboard will fit it to a standard double bed of the "Hollywood" type. Width, height and other dimensions can be changed to fit the headboard to other types and sizes of beds. Solid stock was used throughout on the original, but hardwood-faced plywood also can be used. Cover the raw edges of the plywood with veneer tape for a finished look. Use glue and screws on all joints. On the original, dowel plugs were used to fill counter-bored holes in which the screws were fitted. The screw heads can be countersunk and covered with wood putty. Δ



2. Pulling a dowel from each side of the headboard releases the pivoting back of the top shelf, which then permits removing and replacing telephone and radio. Note cords leading out back, so that none show.



3. Sliding doors of cabinet are removed easily by lifting up, pulling out at the bottom. This feature permits easy cleaning of the cabinet; also is aid when grooves must be lubricated with wax for easy operation.



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Contemporary Setee

MATERIALS LIST

Plywood, 34" fir

- A, Ends 23" x 30", 2 req'd.
- D, Rails, 25%" x 43½", 2 req'd. E, Stretchers, 2%" x 8¾", 2 req'd. F, Back Cleats, 1¼" x 11", 2 req'd.

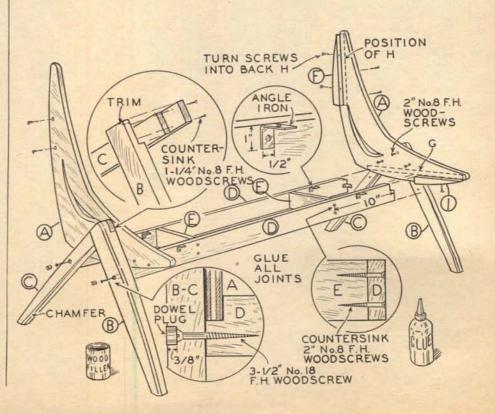
- G, Seat Base, 18" x 42", 1 req'd. H, Back, 11" x 42", 1 req'd. I, Seat Cleats, 11/4" x 73/4", 2 req'd.

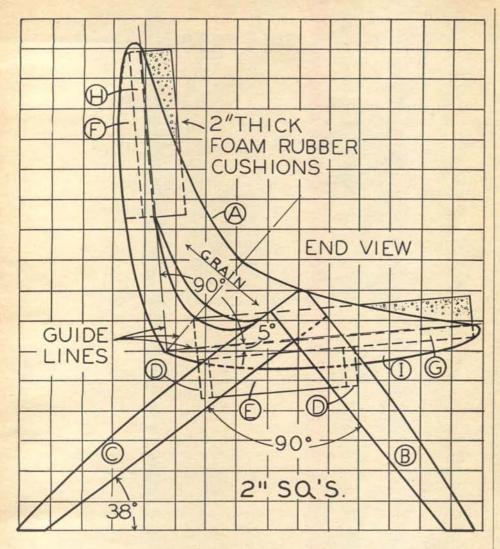
Miscellaneous

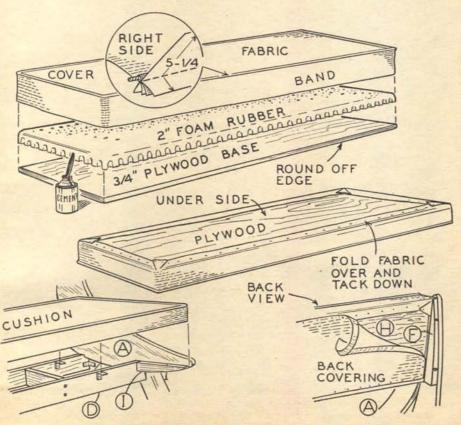
34" Dowels 38" long, 4 req'd. 1/2" x 1" x 1" Steel angles, 8 req'd. 31/2"-#18 FH wood screws, 4 req'd. 2"-#8 FH wood screws, 18 reg'd. 11/4"-#8 FH wood screws, 16 req'd. Liquid resin (white) glue

Solid stock, 1" and 2" fir (finished dimensions are given)

B, Front Legs, 15%" x 25%" x 197%", C. Back Legs, 1%" x 2%" x 241/2". 2 req'd. 2 req'd.

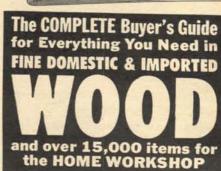






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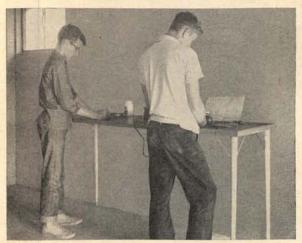
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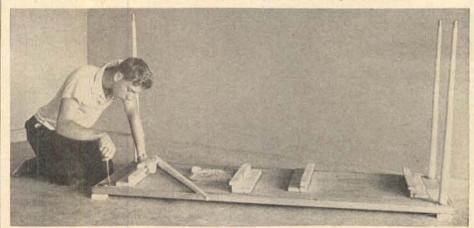
Make A Long-Legged Table



Stand-up worktables are just one of many applications where extra-long legs are required. Others are table-tennis setups, desks, serving tables and counters.

STAND-UP DESKS AND TABLES require legs longer than those usually available. Now obtainable at most lumberyards, hardware stores and by mail are 35-in. hardwood legs sanded and ready for finishing. They may be had with brass ferrules and straight-attachment brackets, or with swiveling

plastic tips and angle-attachment brackets. From Jore and Co., 33-Ten Downing St., Flushing 54, N. Y., Dept. A 191 for \$1.85 each, plus 25 cents postage for each four legs. Bracers for the legs, installed as shown, are four for \$1.98. Free catalog sent on request. \triangle \triangle



Leg brackets are quickly attached with screws furnished. For table top, any hollow-core or solid door or sheet of plywood can be used. Regular table can be modified by substituting long legs for standard ones. Legs screw into brackets, can be removed quickly if bracers are not used.



When necessary to store a table flat, legs can quickly be removed. Leg bracers are not used in this case, table should not be given heavy use.



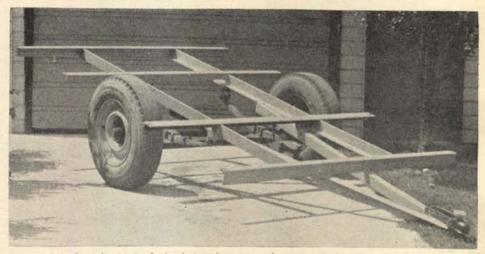
Just three screws are driven to attach leg bracers that assure rigidity to the table fitted with the long legs.



This utility trailer was built in three weeks, the fourth week was used to haul over a ton of furniture 2500 miles to new home in a western state.

Utility Trailer

JAMES HYEK

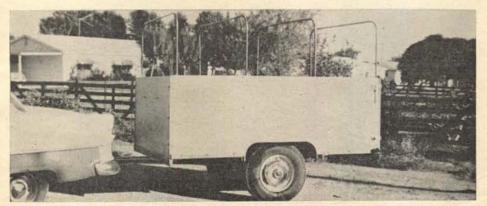


Frame of steel angles is simple in design, but extremely strong. Is fine for utility trailer, readily accepts a camping-type body also. Axle is front unit from ½-ton truck, with steering spindles welded solidly to beam of axle. Salvaged axle is less costly than standard unit.

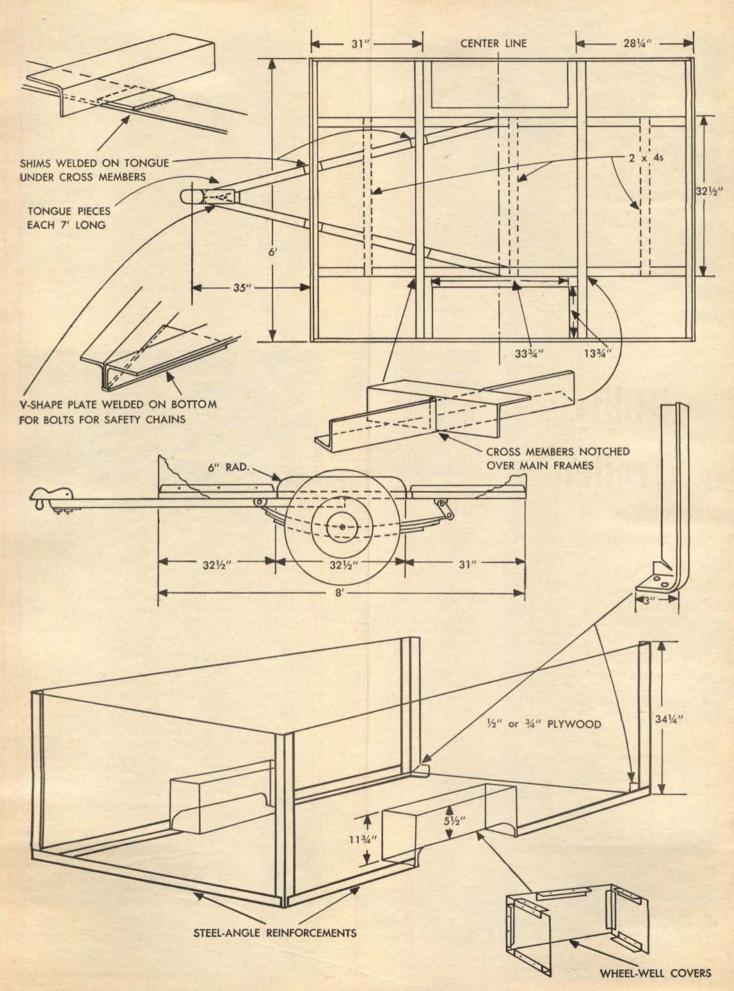
SIMPLE IN DESIGN and extremely strong, the frame of this trailer is constructed of steel angles welded together. The axle assembly was picked up in an automobile graveyard, and is the front unit from a ½-ton pickup truck. Because it was designed originally for a truck, the axle has ample capacity for any load that can be carried in the trailer. If a builder wishes, he can buy an axleand-wheel assembly from a trailer-parts manufacturer or supply house, but such units will cost more than a salvaged unit.

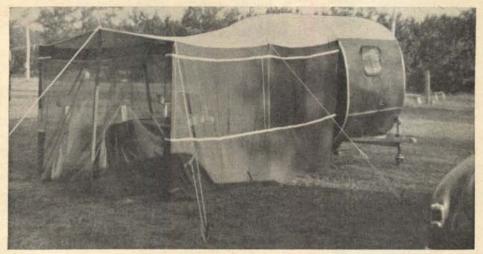
The axle used on the original trailer was complete with springs and spring hangers, the latter being cut off the truck chassis. The first step in construction was to have the steering spindles welded solidly to the axle, with a 1-deg. toe-in. As an added safety measure the steering arms were heated, bent around and welded to the axle also. If you do not have welding equipment, this work can be done at a local shop. While you are there you can get an estimate on how much time and money will be required for him to weld the complete trailer frame.

All the steel angles for the frame measure ¼ x 2 x 3 in. This material can be ordered from any steel-supply



Canvas top is removed here to show how black-steel pipe is bent to form "hoops." These hoops can be made lower, to suit individual preference, or a series of holes can be drilled in the trailer sides so the hoops can be located at various heights with thumb nuts and carriage bolts.





After doing duty as utility trailer, hauling furniture to new home, basic frame was used under a camping trailer, shown here with "porch" with canvas roof, mosquito-netting walls. Original trailer frame was designed with this change of bodies in mind, made strong enough.

house, or, if you are lucky, can be picked up at a metal-salvage yard. In either case, have the metal cut to the required lengths unless you have an oxyacetylene cutting torch. Those heavy angles would take considerable hacksawing to cut.

Mark the center of each of the 8-ft. longitudinal members, then place one on one of the springs so the axle is directly below the center mark. Scribe the location of the hanger for the fixed end of the spring on the longitudinal, then mark the position of the hanger for the spring shackle at the opposite end of the spring. Position the latter hanger so the shackle can move through an arc of about 30 deg. Measure and mark the other longitudinal by measuring the first. Weld the hangers in place.

Next, place the longitudinals on horses, or a flat surface and shim them so they are exactly level. Fit on the front and rear cross members, making sure the longitudinals are spaced the same distance apart at each end. Make sure the cross members are absolutely square with the longitudinals. A framing square can be used, then double-check the squareness of the assembly by measuring the diagonals of the assembly. Both diagonals should be the same length. All four members of the frame should have the 3-in. web vertical, the 2-in. web horizontal. Weld the four angles together. The two center crosspieces are notched to fit over the longitudinals, the notches being cut across the 2-in. web, the 3-in. web being horizontal. True and square them with the frame and weld in place. Now, position the tongue members, the free ends being positioned at the center point of the longitudinals, the forward ends being joined together. Because the lower edges of the two forward cross members are not flush with the lower edges of the longitudinals, steel shims 1/4 in. thick are welded to the

tongue members at each location below the cross members to keep the
latter parallel with the longitudinals.
Weld the tongue in place, then weld
a trailer hitch to its forward end.
A triangular steel plate is welded to
the underside of the front end of the
tongue, holes being drilled in it for
bolts that hold the safety chains.
Three wooden cross members, now
are bolted to the longitudinals. These
are 2 x 4s ripped to a height to make
them flush with the longitudinals.

The floor of the trailer next is bolted in place. In the original, 1 x 3-in. tongue-and-groove flooring was used. Two 4 x 8-ft. sheets of 34-in. plywood ripped to widths of 3 ft. could be used instead. The 1-ft. strips cut off will make the three sides of each wheel-well cover. The tops of the covers can be cut from material left over from the front and side panels. Note that the wheel-well covers and the front and side panels are reinforced at all joints by lengths of steel angle. On the original trailer, these were cut from the frame of an old bed. They need not be the full length of any panel, as they simply are reinforcements. After the front and side panels are attached with angles, the "hoops" for the canvas top are bent from 1/2-in. black pipe.

A trailer with such high sides has enormous capacity, but can be overloaded and become top heavy. If you want just an around-town trailer for hauling soil, materials, lawn mowers, etc., we would suggest reducing the height of the sides and front to about 15 in. The tailgate of the trailer can be held in place easily and economically with two hasps and staples and a couple of short bolts. Thoroughly paint the underside of the trailer floor, as well as all frame members. Where necessary, calk the joints of the wheel-well covers to prevent water entering the trailer body. Strips of metal nailed to the floor assure longer life. \triangle \triangle

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Bruce Plum, 2 to 3 ft.	.49 82
FRUIT TREES Elberta Peach, 2 to 3 ft. Belle Ga. Peach, 2 to 3 ft. J. H. Hale Peach, 2 to 3 ft. J. H. Hale Peach, 2 to 3 ft. Yellow Delicious Apple, 2½ to 3 ft. Stayman Winesap Apple, 2½ to 3 ft. Montmorency Cherry, 2½ to 3 ft. Montmorency Cherry, 2½ to 3 ft. Kieffer Pear, 2 to 3 ft. Burbank Plum, 2 to 3 ft. Red June Plum, 2 to 3 ft. Bruce Plum, 2 to 3 ft. Bruce Plum, 2 to 3 ft. VINES	.49 ea.
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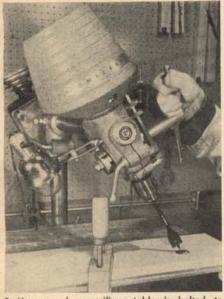
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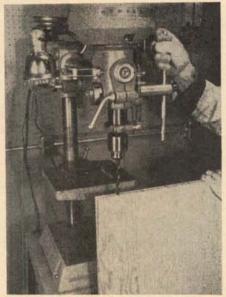


UNUSUAL TOOLS in the MODEL SHOP

1. Column of radial-arm drill press acts as guide when sanding edge of large disk with drum sander. Arm is fully extended.



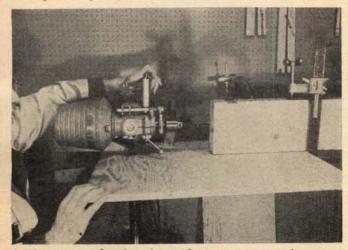
 Here wooden auxiliary table is bolted to metal table, extended arm is rotated to permit angle drilling in piece of stock.



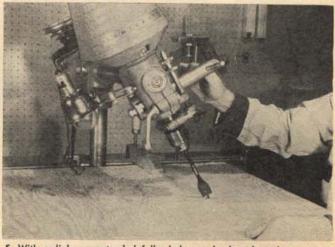
 Large piece of stock can be edge-drilled by placing it on the floor, extending drillpress arm so chuck is beyond end of metal table.

MUCH MORE VERSATILE than the average unit is our Rockwell radial-arm drill press, Figs. 1 through 5. The complete drillhead and motor can be rotated 360 deg. around the column, while the drill head itself will rotate more than 90 deg. to right or left. When the arm is extended, the press will drill to the center of a 32-in. square or circle. The unit even can be used to drive other power tools by fitting the shafts in the chuck.

Not unusual in appearance or operation, our Atlas jointer-planer, Figs. 6 through 8, is an unusually fine machine. Its capacity is a full 6 in., the motor and switch are in the base. A chute at the front of the cabinet discharges dust and chips away from the operator. This is a heavyduty machine that will handle the hardest of woods without slowing or stalling. The heavy fence is adjustable to more than 45 deg. and to any position across the width of the table. If you want to do fine cabinet-



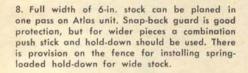
4. When a piece of stock, such as a fence post or support beam, must have holes drilled in the ends, head of drill press is rotated 90 deg. and work is held horizontally. Plywood sheet is used for additional support.



5. With radial arm extended fully, hole can be bored at the center, or any point on a 32-in. square or circle of wood, metal, etc. Chuck of press can be clamped on shafts of other tools to power them.

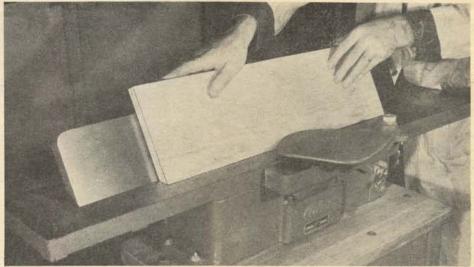


 Atlas jointer-planer is heavy-duty unit, has switch in base. Dust chute discharges waste out front of machine away from operator.

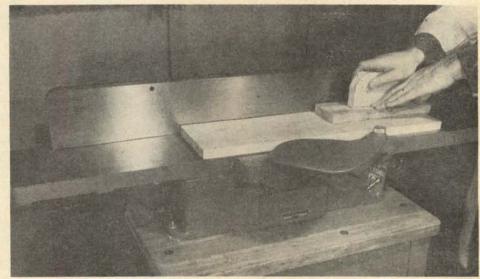


making, a jointer-planer is a must. This tool will edge-plane stock to permit making butt joints that will show only as a hairline when glued and clamped.

If your budget for power tools is small, the AMT table saw, Figs. 9 through 12, may be the answer to your problem. While the unit is small in size, it has a full-size 8-in blade

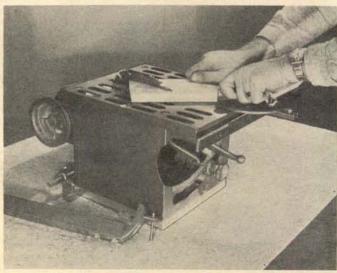


7. Any angle can be cut on the edge of stock with just a few passes on the Atlas, rough edges are smoothed with a single pass, taking a light cut. Fence adjustment has indexing stops, also can be positioned at any angle up to 45 deg. Fence is solid, well supported at any angle.

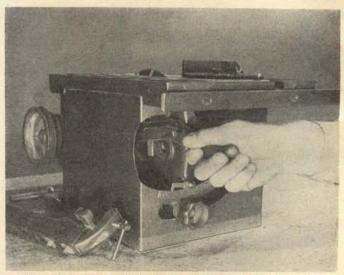


and can be used for crosscutting, making compound miters and for ripping. Some of the secrets of its low cost are that the body of the

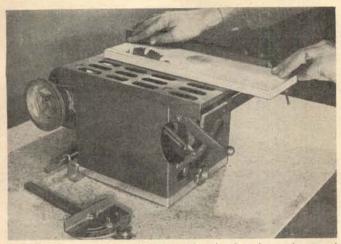
saw is of sheet metal, although the table top itself is a casting. The adjustment for raising and lowering the blade is controlled by two levers:



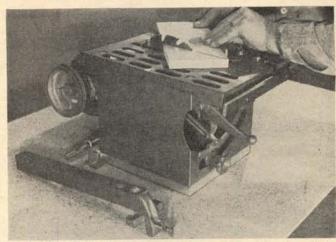
 While table of AMT unit is small, there is no problem in cutting compound miters, as shown. Table extensions can be made in your shop, or they are available from the manufacturer.



10. One of the secrets of the low cost of the AMT table saw is the simplified method of adjusting the arbor. Two levers, one for adjustment, one for locking the arbor, are used, as indicated.



11. With aid of rip fence, almost any length of stock can be ripped accurately. Motor mount fits on the base of saw in two eyebolts, permitting the weight of the motor to keep belt at proper tension.



12. Saw has full 8-in. blade, will cut to 2½ in. when positioned vertically, to 2 in. when set at 45-deg. angle. As with any table saw, owner should fit an extension on the miter-gauge head to permit easier handling.



13. Fence on AMT jointer-planer can be set to provide full 41/8-in. cut, adjustments are made easily. Table and fence are metal castings.

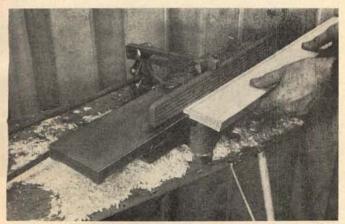


14. Beveling edges of stock is no problem; the fence adjusts up to 50 deg. If work is forced into the blades of the cutter it will slow or stall. Unit is not designed for heavy-duty or constant use, but will handle most of the jobs in the average home workshop.

one moves the blade up and down, the other locks the adjustment. The motor for the saw is fitted on a mount that has a steel rod clamped to it. The steel rod slips into two eyebolts on the saw base and the weight of the motor then is supported by the belt, keeping it under tension.

Another economy tool is the AMT jointer-planer, Figs. 13 through 16. With a capacity of 4½ in. across the table, this tool will handle most jobs in the average home workshop. This is not a heavy-duty unit, and forcing

the work can slow or stall the motor. We found, however, that with reasonable care we could work hardwood with no problems. Because of its size and light weight, we mounted the unit on a discarded ironing board. It made a fine "fold-away" base. \triangle



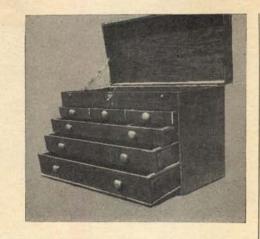
15. Cutting a tongue on the edge of stock is done by adjusting fence to required width of tongue, then making several passes until rabbet is cut on each side to produce the tongue, as indicated in photo.

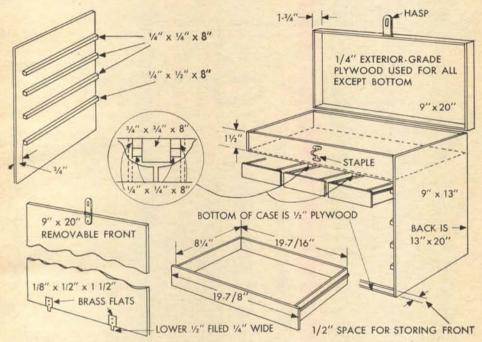


16. Surface up to 4½ in. wide can be planed in one pass. This operation puts greatest strain on machine, requires slower feed than when edge-planing. Planer must be bolted to some kind of base.

Machinist's Toolbox

R. A. HILL







In upper photo front of toolbox has been removed and fitted into storage space at bottom of unit. In lower photo front has been fitted in place, hasps slipped over staple so that box can be locked with padlock to prevent "borrowing" of the tools. Note hooks and eyes used between top and front of box, that reduces strain when lifting box by handle. START CONSTRUCTION of this toolbox by assembling the 13 x 20-in. back, the 9 x 20-in. top and bottom and the 31/4 x 20-in, front inside the 9 x 13-in, side pieces. Nail and glue all joints. Use your table saw to cut the completed box apart to produce a lid 134 in. high. Attach this with a continuous (piano) hinge. Nail and glue a bottom in the top compartment. Use glue blocks for support if necessary. Number of drawers and their height is up to the builder. On the original the bottom drawer was 21/2 in. high, the next two were 21/4 in., the three smaller drawers 11/4 in. high. Strips glued to the drawer sides and to the inside of the box provide runners. The brass hasps and staple are attached with nuts and bolts, riveted over on the inside. These hardware items, as well as the handle and optional metal corners and hooks and eyes on the front of the case, can be purchased from most hardware stores or at mail-order houses. Two 1/4-in. holes are drilled near the front edge of the bottom of the box to accept the projections of the brass flats on the removable front. Paint the box with flat-black enamel. \triangle \triangle

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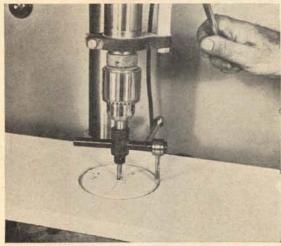
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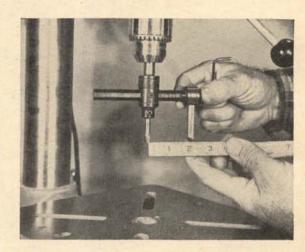


1. Fly cutter is adjustable to make holes up to 6 in. in diameter. Generally is used in a drill press because of need for slow speed, proper alignment, light pressure.

HOLE CUTTERS

RALPH TREVES

2. Horizontal shaft slides in hub to adjust size of hole cut, set screw locks shaft in place. Some types of fly cutter have adjustable cutter as well as shaft.



CHUCK CAPACITY OF your portable drill may be only ¼ in., that of your drill press ½ in., but these tools can be used to cut or bore holes several inches in diameter. Even a hand brace can be used to bore fairly large holes. Special drill bits and accessories are the answer. With a hand brace, expansive bits, Fig. 4, can be used; these same



3. Circle saws are available in variety of diameters, in ¼-in. steps. All lock onto same arbor that is grooved to accept the various sizes. Pilot bit in center guides saw, keeps it on center in drill or press.

bits can be used in a drill motor or press by cutting off the square shank. Power bits, Fig. 5, are in the same range of diameters. Both these types of bits are ideal for installing locksets. The next step up in size requires hole saws. These are available in individual cup shapes, or as a multi-size accessory, Fig. 3, with a number of different-size blades fitting a single arbor. Holes up to 6 in. in diameter can be cut, even in sheet metal, with the aid of a fly cutter, Figs. 1, 2, and 6. For boring holes, the straight edge of the bit is on the outside of the circle; when cutting disks, the tool bit is reversed so the waste material is on the outside of the circle. The "kerf," or width of the tool bit must be allowed for.

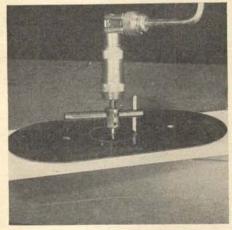
When using hole saws, power bits and fly cutters with a portable drill, care must be taken to hold the drill straight to assure that the resulting holes will not be out of round. Also all work being bored should be clamped firmly. The oversize drill bits and cutters have sufficient torque to make hand-holding work difficult, if not impossible.



4. Expansive bit can be used in hand brace, or square shank can be removed and bit used in drill press. Screw tip also must be ground smooth when bit is used with power. Bits of this type usually can be adjusted up to 114 in.



5. Power bits permit using a ¼-in. drill motor to drill large holes, such as required to install a lockset in a door. These bits must be turned at fairly high speed to make them effective, making portable drill ideal power unit.



6. Fly cutters can be used in hand brace to cut metals and plastics, as well as wood. Disks can be cut by reversing cutting bit, so waste is on outside of circle that is cut. This type cutters should be turned slowly, work clamped.

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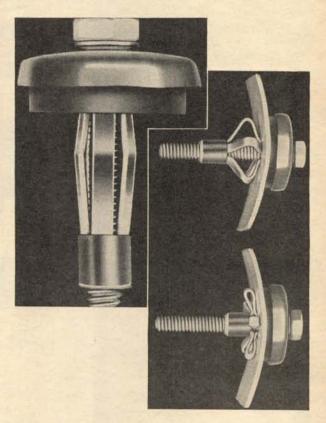
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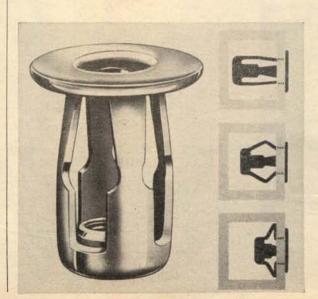
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2. Jack Nuts require only 3/4-in. expansion space, are ideal for hollow-core doors and for fastening items to sheet-metal of car bodies where it is impossible to reach the back side. Screws can be removed and replaced.

Book Reviews

INBOARD MOTOR INSTALLATIONS IN SMALL BOATS By Glen L. Witt "Glen L." Marine Design 9152 E. Rosecrans, Bellflower, Calif., \$6.00

Genuinely a "How-To" Book, this volume keeps technical material to a minimum, yet still explains the theory and mathematics involved in location of inboard engines in small boats. Described are automotive-engine conversions, V-drives, inboardoutboard drives and the advantages and disadvantages of each. Shown in step-by-step photos is the required method of installing a strut and propeller shaft, rudders, fuel tanks, instruments, etc. For the amateur boat builder with a yen for an inboard, this book is a must. Equally fine for "armchair" yachtsmen.

THE SLIDE RULE AND HOW TO USE IT By Sommers, Drell and Wallschlaeger Follett Publishing Co., 1010 Washington Blvd., Chicago 7, Illinois, \$2.95

Don't envy engineers with their fast, one-hand computing with a slide rule; learn to use one yourself with this well-written home-study course. A plastic-ring binder allows the pages to lie flat for easy study, and tests in the volume let you check yourself on your understanding of the information. Whether it's determining the required number of board feet of lumber, adding a grocery list or figuring angles and proportions, a slide rule provides you with a pocket-size calculator; this book shows how to use the rule.

IT'S EASY TO FIX YOUR BIKE By John W. McFarlane Follett Publishing Co., 1010 Washington Blvd., Chicago 7, Illinois, \$1.25

Both American and foreign bicycles are described in this valuable book, that contains 308 photos, showing step-by-step assembly and disassembly of every part of every bike. An ideal book for fathers who have to repair and maintain their youngsters' bikes; even better for youngsters who want to learn to do their own mechanical work.

COLORING, FINISHING AND PAINTING WOOD By Newell and Holtrop Chas. A. Bennett Co., 237 N. Monroe St., Peoria 3, III., \$9.35

One of the most comprehensive books we have read on this subject, this volume even tells the sources of the raw materials used in finishing

coatings. It describes how to prepare wood surfaces for finishing, tells the advantages and disadvantages of various types of finishes and stains. The chapters on refinishing old furniture are especially informative. We recommend this for the library of any home craftsman who wants to know about finishing and refinishing wood of any kind.

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 Drill out broken dowels. Remnants of hardened glue should be removed by reaming the hole with a drill bit of the same diameter.

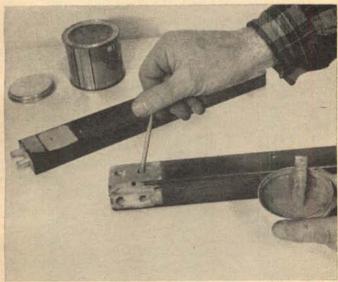
Repairing Chairs

WHEN CHAIRS GET RICKETY, wobbly and squeaky there is just one way to restore them to first-class condition; a complete regluing job. A well-done restoration will keep chairs in likenew condition for years. Temporizing with half-way measures is a waste of time.

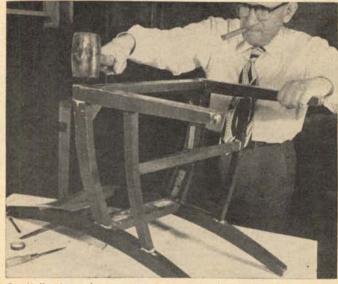
If a chair is just annoyingly squeaky, the corner blocks under the seat may be loose. Turn the chair over and use a large screw driver to tighten the screws in the triangular blocks. If the screws turn without tightening because the holes have become oversize, replace them

with the next larger diameter screws. Do not use longer screws. They may tighten, but will quickly loosen because the shanks do not fit snugly in the oversize holes.

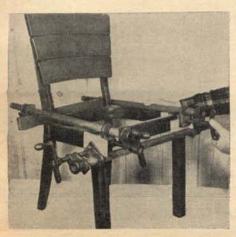
If a major regluing job is necessary, a set of bar clamps, or clamp fixtures that fit on lengths of pipe,



2. Mix only a small amount of glue at a time. Use a matchstick or wood sliver to spread glue inside holes. Spread glue evenly over surfaces.

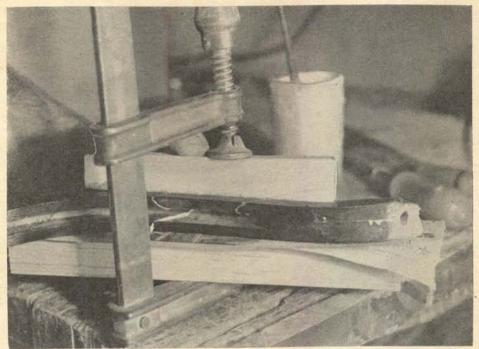


3. Mallet is used to tap joints apart to disassemble chair, then to reassemble it. Use strips of cardboard to prevent damage.



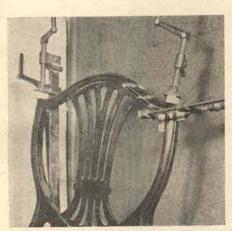
- As each side of chair is assembled, apply clamp pressure. Keep clamps level to avoid twisting frame, apply pressure moderately.
- 5. Don't discard chairs damaged in this manner; just save the pieces, most furniture can be repaired to look almost as good as new.



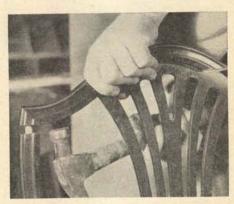


6. Small pieces are glued together first. Make sure the various parts join smoothly before you apply clamp pressure. If the small pieces fit well, the assembly can be inserted easily in the chair frame.

is required. The fixtures are inex-pensive, and can be used for dozens of jobs around the home shop after the chair rebuilding is finished. The best procedure is to completely disassemble a chair, Figs. 3 and 7. Do this carefully to avoid breaking the wood or hidden dowels. Use a wooden mallet to loosen each joint (protect finished surfaces with pieces of cardboard). First step, of course, is to remove corner-reinforcing blocks, then loosen stretchers that join the legs, and finally the seat frame. If the chair is the ladder-back type, place the slats aside in proper order as you remove them. If any dowels are broken, saw them flush with the surface and redrill them the same diameter, Fig. 1. A new dowel then is cut to length, glued and driven into the hole. If a tenon has broken off, drill it in two places on the



 Apply clamps from whatever sides are necessary to assure pressure on glued surfaces. On curved surfaces, shape blocks to fit to provide flat clamping surfaces.



7. Doweled joints often dry out and become loose. If you see one loose joint, check all others, remove loose parts, clean them and reglue to assure a complete job.

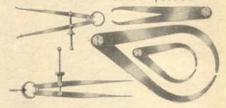
center line and substitute dowels for the tenon. Dowel holes sometimes become enlarged, and it is difficult to drill an oversize hole for a larger dowel. One method often used is to saw a slot in the end of the dowel and insert a thin metal wedge that projects slightly. When the dowel is bottomed in a hole the wedge spreads the dowel to lock it in the hole.

Before assembling a chair, scrape away all old glue and sand lightly. Use any quality wood glue, first working some into dowel holes, Fig. 2. Wipe away excess glue immediately, when the pieces are tapped together, Fig. 3. Apply clamps to pull the parts together evenly, Fig. 4. Broken pieces, Figs. 5 and 6, are glued together first. When the glue has set, the glued assembly is fitted in place. Shaped blocks may be necessary on curved surfaces to provide clamping flats, Fig. 8. \triangle

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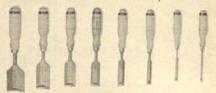
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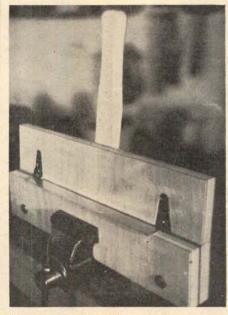


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SHEET METAL BRAKE

DICK HUTCHINSON



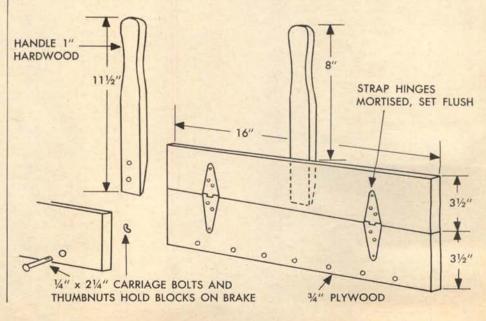
When bending single flanges on longer pieces of work, longer block, the same length as base of brake is used. It is held against brake by two or more carriage bolts and thumbnuts.

METAL UP TO 16 GA. can be bent with this simple brake. It consists basically of two strips of 34-in. plywood 31/2 x 16 in. hinged together. Strap hinges are used, being mortised and set flush with the surface of the wood. The hinge-pin projections also are mortised, and because the hinges are mounted wrong-side out, the screw holes will have to be re-countersunk. For straight bending of metal, a third strip of plywood 31/2 x



All four sides of a metal box can be bent on brake by using blocks of a size to fit inside bending lines of box. A variety of blocks can be used, all drilled to match holes in brake.

16 in. is used, being held to the brake with 1/4 x 21/4-in, carriage bolts and thumbnuts. To permit bending all four flanges on a box, shorter blocks are cut and drilled to accept the carriage bolts. Space holes along the brake equidistant, then drill the various blocks to match the hole spacings so they can be held with bolts. In use, as shown, the brake is clamped in a vise that acts as a "tool stand" for the unit. A A



VINYL-SURFACED WALLBOARD

APPLIED AS EASILY as ordinary plaster-board, this new wallboard is surfaced with vinyl plastic. The 4-ft.-wide sheets can be cemented in place, or applied with matching colored nails. Stubborn stains can be scrubbed away, but ordinary soiling can be wiped off with a cloth dipped in a mild detergent solution. A textured pattern is embossed on the vinyl that is available in five attractive colors. Marketed under the name "Durasan," the wallboard is manufactured by National Gypsum Co.





Panels of Durasan are 4×8 ft., permitting fast covering of a complete wall. Colored nails are available to match the five colors so the panels can be nailed directly to the studding, or they can be cemented to a surface. Vinyl surface is cleaned easily of normal stains.



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MULTI-LAMP



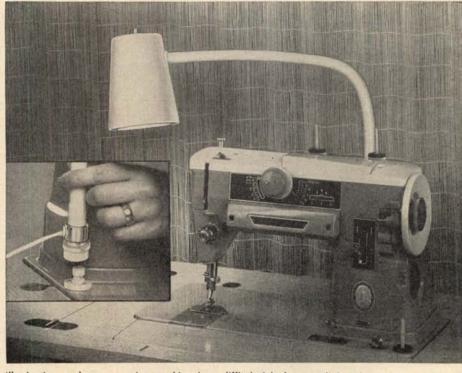
Easily positioned for studying, the Multi-Lamp illuminates the student's work, does not glare in her eyes. Nylon button is fastened to desk.

OCCASIONALLY SOMEONE comes up with a new design or idea for a common item that completely changes its character and broadens the scope of its usefulness. The Multi-Lamp is an example of this sort of ingenious redesigning and we have given it our Workshop Tested Seal after a thorough testing.

Basically, this light is a "goose-neck" lamp. The differences start with the flexible column that has a plastic covering. The column is quite resistant to bending, and once bent to a shape, will keep it. The lamp shade is double, so that the



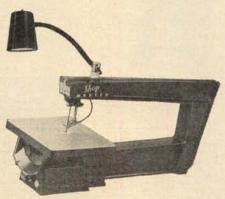
Completely out of the way of the saw operator, the lamp here is fitted on a nylon button that has been fastened to the ceiling overhead.



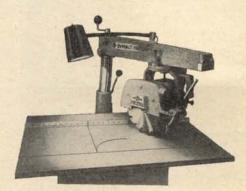
Illuminating work on a sewing machine is a difficult job for any light. The Multi-Lamp can be positioned in so many ways that it is ideal for this task, is readily removed.

outer shell is always cool to the touch. The bulb is recessed so that it does not shine in your eyes. The cleverest feature of this lamp is a nylon "button" that can be fastened almost anywhere; the ceiling, a tool, sewing machine, window sill, bed headboard — wherever the lamp is

needed frequently. Five of the buttons are furnished with each lamp; thus the lamp can be used in that many locations. The lamp base snaps onto the button, is released by pulling up on the sleeve on the base. Right-angle brackets permit attachment to a vertical surface. \triangle \triangle

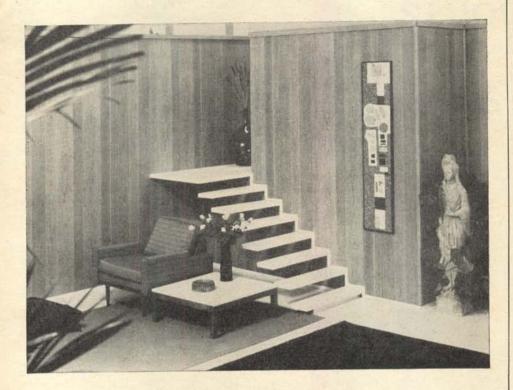


Self-tapping screws fasten the nylon button to the upper a.m of this jig saw. The lamp can be positioned to shine where needed.



You never work in the dark on your radialarm saw when a Multi-Lamp is fitted on the arm; it will light up any sawing job.

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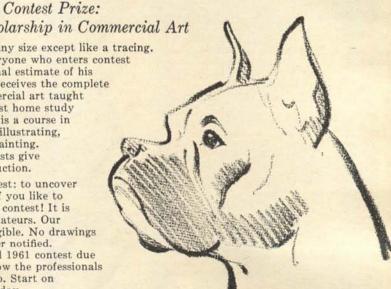
IN COLOR AND APPEARANCE, these panels look like genuine wood, but actually are easy-to-handle hardboard. Random-width grooves add interest to the panels that are 16 in. wide and 8 ft. long. Tongue-and-groove edges and concealed metal clips simplify installation, which can be done over existing walls, studs or furring strips. The factory-applied finish is extremely smooth and should be given a coating of clear varnish, lacquer, shellac or wax to protect it. Once the protective coating has been applied, an occasional wiping with a damp cloth will keep the surface clean. Royalcote Cherry panels are available in three colors, Royalcote Walnut in four colors. Special nails, colored to match the panels, can be used to face-nail where necessary. Panels and nails available wherever Masonite Products are sold. △ △

Before applying calking, surfaces should be dry, clean and free of dust and grease. Masonry surfaces should be dusted with a stiff-bristled brush. Metal and glass also should be free of oil and dirt. Nonporous surfaces can be wiped with mineral spirits or similar thinner, but should be dry when calking is applied. National Paint, Varnish and Lacquer Assoc.

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Ranch-House Dormer



This small frame home is typical of thousands across the country. Adding a room would be prohibitively expensive and reduce yard area, a Penta-dorm is the solution. Installation can be handled under FHA loan.



Frame "ranch" home, smaller than the brick structure, is improved even more by the addition of the Pentadorm. Living area is increased greatly, as is storage and closet space. Extension of chimney was necessary here.



This attractive one-story brick home fills most of its lot, there is little available space for adding on a room. In many areas there is a specified set-back, prohibiting building at front; Pentadorm is answer.



Fitting in well with the one-story brick home is this frame Pentadorm. Several floor plans are available, having one, two or three bedrooms and bath. There is air space above the dormer and it is well insulated.

ROOF LINES ON MOST RANCH-TYPE HOMES are too low to permit the installation of a regular dormer. The only means of expansion then, is to add a room at the back or sides of such a structure. This requires digging footings and foundation, extensions of utilities and heating, with the unavoidable loss of yard area. A new, lowercost solution to the problem combines the practical features of a conventional dormer with the elegance and spaciousness of a penthouse; thus is called a "Pentadorm." This method of construction "floats" or suspends the dormer above the existing ceiling, so that the weight is carried only by the load-bearing outside walls. An added advantage of this construction method is that it helps prevent transmission of sound from one floor to another.

Heat from the first floor is used to warm the addition. In most cases the existing heating plant can handle the job without trouble. Usually the roof can be opened, the Pentadorm installed and the roof resealed in one day. The opening for the stairway to the floor below is not cut until most of the work upstairs has been done. A patent has been applied for, to cover the construction method, and Pentadorms are installed by franchised contractors. For more information on such franchised contractors in your area, or on the availability of such franchises, write American Franchise Systems, Inc.,

18415 W. Eight Mile Rd., Detroit, Mich. △ △

Filigree Plastic Room Dividers



Plastic filigree panels are available in this floral design, and in oriental design to fit almost any decor.

MANY MODERN HOMES have combination living and dining areas with no method of dividing the room. An ideal solution to this problem is a filigree openwork plastic panel that gives the visual impression of a definite break, yet which allows light and ventilation to pass freely. The panels are 12 x 36 in. in size and ¼ in. thick. They are fastened to poles of the type used for lamps. Poles can be supplied brass plated or with black baked-on enamel finish. A basic unit of two panels and two poles starts at \$12.98. Bernard Edward Co., 5252 S. Kolmar Ave., Chicago 32.



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Copy carefully into each of the large squares the portion of the design that appears in each correspondingly numbered square of the original pattern.

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Plan-of-the-Month Club Box 377, West Sacramento, Calif.



Dear Research Editor:

I've often thought it would be fun to apply a crackle finish on some odds and ends of furniture around the house. It seemed that this might spruce up pieces that do not have any particular personality as they now are. Do you know how I might go about doing this? And can such a finish be applied to other materials? Mrs. A. R., Tenn.

Dear Mrs. A. R.:

There are a number of novelty finishes such as crackle that are not particularly hard to apply. Some have to be baked, but crackle is not one of these. The only requirement is a spray gun. Crackle enamel is applied over a lacquer undercoat. It can be obtained in an assortment of colors, or clear. The crackle effect is obtained because the enamel dries almost instantly and cannot hold its over-all coverage on the work. Instead it cracks into many small sections, producing the finish you desire. To apply, first spray on the base lacquer undercoat. Care in color choice here will result in a pleasing end result. To create an oriental feeling, a black base coat with red crackle is often used. The combinations are nearly endless. Others might be green over brown, brown over ivory, blue over gray. Make sure that the undercoat of lacquer is completely dry. Then spray on the crackle finish. A word of advice: the lighter this crackle coat, the smaller the cracks. It might be wise to practice on some scrap material, for you will find that this experience will be helpful in maintaining a uniform appearance. When the crackle finish has dried, protect it with clear lacquer.

Interesting effects can be obtained on colored glass, parchment, or polished metal. To get a transparent effect use a clear lacquer or gold color base coat. Then take a clear crackle enamel and just tint in the color, using, for instance, one part color to ten parts of clear enamel. When all is dry, again finish off with a coat of clear lacquer as protection.

It is an interesting process, not hard to do, allowing great variation.

WORKBENCH RESEARCH DEPARTMENT

EACH ISSUE IN THIS COLUMN WE WILL CHOOSE QUESTIONS ON HOME AND SHOP SUBJECTS FROM LETTERS SENT TO US. ONLY THOSE QUESTIONS WHICH HAVE WIDE APPEAL WILL BE ANSWERED HERE. QUESTIONS ON SPECIALIZED SUBJECTS WILL RE ANSWERED BY INDIVIDUAL LETTER FROM THE RESEARCH EDITOR'S DESK.



Dear Research Editor:

Several years ago I glassed my boat hull and it has been very satisfactory, except that last summer we must have cut the bottom with a sharp rock, for now that it is out of the water I notice one spot, oval in shape, about 6 inches long, that is cut open. The wood underneath seems to have rotted in this spot, but is pretty well contained to this area. The damage does not go through the wood. Is it possible, first, to repair this; and next, do I have to completely refiberglass the hull? Mr. D. J., Ohio.

Dear Mr. D. J.:

Of course it would be better if there were nothing to repair, but since the damage is done, rest happy in the fact that the repair is relatively simple. It is not only possible but quite easy to make the repairs, and the whole hull does not have to be reglassed. First thing to do is to remove all rotted wood. Dig this out with a knife, chisel or similar tool. Use coarse sandpaper if you wish to finish up, but do not smooth the surface very much. Do not use a paint remover or blowtorch. Clean wood with carbon tetrachloride or a mild solution of detergent and water. Let dry thoroughly. Patching material is next. Wood dough will work (you can purchase this or make it from a mixture of sawdust and boat resin) or take chopped fiberglass fibers (they can be purchased this way) and mix with a small amount of resin to form

a thick paste. Add hardener in either case, of course. Fill hole to a little above surrounding surface This will allow sanding later to bring it back perfect. When this filler is dry, sand to the exact contour of the hull. Use a fairly coarse paper for this. Now, using fiberglass cloth, make a patch to cover that laps three or four inches all around. Again using the same boat resin and hardener that you used to do the boat in the first place, paint on a layer of resm, place glass cloth in place, then apply more resin on top to completely impregnate the fibers. Let this dry, sand to feather off edges, apply one or two more coats, with fine sanding between each You did not mention whether you had used paste color in the resin originally, but if you did, add this same color to the last couple of coats of resin you put on the patch. If you did not do this in the first place, we assume you painted the hull. After the last sanding and polishing, repaint the spot.



Dear Research Editor:

I have often heard that it is very important to water trees in the winter. I find this hard to understand, for I thought that trees, particularly, sent their main roots deep into the soil and penetrated into the water table where there would be no water shortage any time. Can you straighten me out on this? Mr. G. P. O'M., Ill.

Dear Mr. G. P. O'M .:

Tree experts uniformly agree that tree watering during winter months is of great importance. In the case of deciduous trees, even after their leaves have fallen, root development continues on during late fall and part of the winter. As a matter of fact, there is considerable root growth during these winter months until the roots are actually frozen. This growth requires a considerable amount of water. Watering is necessary. Mulches of peat moss, leaves, sawdust also will help in slowing rate



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and depth of freezing, and if water is available, increases growth.

Injury to conifers and broad leaf evergreens is more apparent and often more frequent, because they stay in leaf throughout the year. Lack of water results in "bronzing" of the leaves, particularly during mild winter weather. "Bronzing" can be frequent, severe, and result in permanent damage to the tree. Some species of pine require as much as 10%-13% of their summer water inspiration rate during winter.

So the best advice would be to regularly water your trees, both summer and winter. Overwatering is unlikely.

Dear Research Editor:

I have been storing a piece of plastic sheet for use as a windshield for my outboard boat for several years in my basement. I though it was perfectly safe since it had adhesive paper on both sides. Recently, after I cut it to fit the windshield frame I took the paper off and found several deep scratches along with five or six minor scratches. Evidently it had rubbed against something rough. Since this piece of acrylic plastic is quite expensive, I certainly want to salvage it if I possibly can, but I do not want to use it as it is. Can you give me any suggestions as to what I might be able to do to remove these scratches? Mr. M. W., Fla.



Dear Mr. M. W .:

Roll up your sleeves, because if you want to salvage the windshield, you are in for some tiresome work. Fortunately, the job can be done, and if you persevere, no one will ever know where the scratches were. There are three courses of action: hand polishing, machine buffing, and sanding. Which you use will depend upon the severity of the scratch.

Hand polishing will remove or greatly reduce minor scratches. Polishes can be most satisfactorily applied with a small cotton-flannel pad dampened with water. It may be necessary to apply this treatment several times, but it will reduce minor scratches and improve the clarity in a fairly short time.

Deeper scratches can be restored by machine buffing. Start first with an abrasive wheel, then a tallow wheel, with the final step a finish wheel. Be sure the plastic is dry before you start any of these buffing operations. While buffing, sanding or polishing keep the work constantly in motion with pressure against the wheel held to a minimum. Change direction of buffing often. Working too long in any one spot-or too vigorously—will generate heat enough to soften and "burn" the surface.

The most drastic of all treatments. and only for scratches too deep to be removed by light buffing, is sanding. Start by using the finest grade sandpaper that will still remove the imperfection. Try 320-A for first sanding, followed by 400-A or finer. Use plenty of water while sanding and wash carefully before going on to a finer grade. Sand in a wide area around the scratch, feathering-in, to avoid distortions. After this sanding procedure, buff to as good a finish as you can get with a fine abrasive. Then wax with tallow or fine wax and polish to a high gloss.

General suggestions would be, first, to use the least drastic treatment. If this obviously will not do, go farther. In all operations, exercise great caution, remembering "elbow grease" is the chief ingredient. When the job is done, wax the whole sheet and polish. Wax is excellent protection and will help to extend the useful life of the plastic.

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and department stores, or can be purchased by mail.

Similar methods are used in the Let's Sing Songs albums that teach young and old alike to sing songs in foreign languages. A pleasant way, incidentally, to introduce languages to youngsters. Words are taught first, then they are combined with music. All words, both in the language, and in English, plus piano accompaniment for each song are in the illustrated song book. These courses are \$4.95 each from the same stores that sell the language courses. For more information write: Ottenheimer Publishers, 4805 Nelson Ave., Baltimore 5, Md. A A





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ANNOUNCING

Young America

Sponsored by the Flower & Garden FOUNDATION

A non-profit organization established to awaken public interest in gardening, community improvement through horticulture and to especially encourage youngsters to learn the joy, profit and pleasure of gardening.



Carol Sears, Middlebury, Vermont, reclaimed a waste area near her home, and with the help of her family built a greenhouse to raise plants for it. The greenhouse won an award at the 4-H field day.



John Krill, Jr., North Lima, Ohio, took an award with his simple but workable way of starting garden seeds early without benefit of greenhouse or hotbeds. He built a special raised seed bed which drains fast and warms early and covers the rows with plastic-covered protectors as shown.



Elaine Dywan, of Gary, Indiana, a seven-year-old, concentrated her efforts on a lettuce salad starting with the seeds. How successful she was is shown by her picture, showing a beautiful plant of leaf lettuce ready for the bowl.

THOUSANDS OF PRIZES

More prizes than ever before will be given winners in the 1961 Young America Gardens Contest.

Practically everyone has a chance to win recognition. Members of any group (even one formed just to work in this contest) or organized club of six or more, like 4-H Clubs, Girl Scouts, Camp Fire Girls, Boy Scouts, Cubs, Brownies, Schools, Junior Garden Clubs, are eligible. While working with a club or group leader for help and encouragement, each youngster may choose his or her own project.

Projects may include raising flowers, vegetables or a related project like flower arranging, plantings in park, home, school or church yard.

THOUSANDS OF PRIZES

The FLOWER and GARDEN FOUNDATION, with the help of many nurseries, seed houses and firms interested in horticulture, has arranged an impressive array of prizes. To make competition more equal and give everyone a better chance to win, the country is divided into 39 areas . . . mostly by individual states although some of the less populous ones are joined to form one area.

PRE-TEEN AND TEEN AGE

In addition to prizes being awarded by area, contestants will be divided between pre-teen and teen age. A winner will be selected in each age bracket from each group working under an individual leader or sponsor. For first place a Certificate suitable for framing will be given the group winners.

Group winners are then eligible for the county judging, where three from each age class will be selected and in turn they will be awarded

The county winners next are judged on the area basis... mostly single states but 39 areas in all. There will be three top awards for each area and each age group (six altogether) and these winners will receive plaques.

\$100.00 SCHOLARSHIPS FOR TEENS

From the TEEN AGE group in each area there will be given a top award of a \$100.00 Scholarship, to be sent to any accredited school of the winner's choice. While this may be used at the high school level, it is the hope of the contest sponsors that this will be used in college for studying various phases of horticulture.

LEADERSHIP AWARDS

Special recognition will be given the leaders of the individual group winners as well as the county winners. An extra special recognition will be given the county sponsor or chairman as well as the group leader of the state SCHOLARSHIP WINNERS.

HOW TO WIN

Any type of individual gardening project that strikes the youngster's fancy may compete. This might involve plant hybridization, grafting, gift plants for shut-ins, money making projects, window boxes, family vegetable gardening, landscaping, raising flowers, growing under artificial light or any gardening idea that an individual can do by himself.

SURPRISE GIFTS!

Various nurseries, seed houses and horticulture firms are cooperating by supplying thousands of horticulture gifts. These prizes will be awarded in both age groups at the county as well as the state level.

HOW TO ENTER

Each county will appoint a county chairman who will usually

THE 1961

Gardens Contest

39 \$100.00 SCHOLARSHIPS

work through the county agent's office or local garden club. They will give advice and help on all phases of the gardening projects as well as appointing and selecting county judges. In case your county fails to act, you may work direct through FLOWER and GARDEN FOUNDATION.

Any adult who now is the sponsor of any club or anyone wishing to organize six or more young people into a garden club may enter the group in this contest by filling out the coupon on this page. It's as sim-

ple as that.

CHILDREN WHO DO NOT BELONG TO ANY YOUTH OR-GANIZATIONS but would like to enter may do so in this way: (1) find five or more other children of pre-teen or teen age who would also like to work in this contest this summer; (2) find an adult willing to sponsor you and judge your proj-ects; (3) name your club and have your sponsor send the coupon (at right) to FLOWER and GARDEN FOUNDATION or to your county agent.

COMPLETE KIT FURNISHED

The club leader will be furnished a complete kit and a blue print of step by step procedures. This will include suggested lesson materials for various meetings and how to maintain interest and enthusiasm among the young gardeners.

In many cases your county agent will have this material available. In case he does not, or to avoid delay, send the coupon direct to the FLOWER and GARDEN FOUN-DATION, otherwise take it to the county agent and let him enroll your

1960 Contest Winners Write:

"The \$100 scholarship has been a real boon to me in my second semester tuition. I am extremely glad I could participate in the contest.'

"I am grateful that I was recog-nized as having a meritable project in your contest. I hope to do better in future years and make my life work in this field."

"Thank you for the wonderful contest . . . it perked up the boys' interest in gardening and gave them something to be proud of also."

\$100.00 Scholarship to each of these 39 Scholarship Areas

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Kentucky Ohio Michigan Indiana

Illinois Wisconsin Minnesota lowa Missouri Arkansas Louisiana Texas

Oklahoma Kansas Nebraska

North Dakota, South Dakota

Montana, Wyoming Colorado

Idaho, Nevada, Utah Arizona, New Mexico

California Oregon Washington

CONTEST RULES

1. Open to pre-teen and teen age boys and girls living within the continental United States. 2. Contestants must belong to or work with a group of six or more young gardeners with a junior or adult leader.

3. Group must enroll on an official entry blank obtained locally or secured direct from FLOWER and GARDEN FOUNDATION. These official entry blanks may be copied or repro-

duced by local chairmen if more are needed.

4. Group winners must be selected by August 1st. County winners by August 15th. Contest closes September 1st and names of the county winners must be in the hands of the area judges by then (your kit will give full instructions on how to handle state contest entrants.) 5. Duplicate prizes will be awarded in case of tie, except on scholarships. In case of an area tie the prize money will be divided equally.
6. All entries become the property of Flower & Garden Foundation and cannot be returned.

The same contestant may not make more than one entry.

8. Names of top winners will be announced in the December, 1961 issue of Flower and Garden Magazine. Decisions of the judges will be final.

This form to be returned only by adult leader of participating clubs.

Official Entry Blank 1961 YOUNG AMERICA GARDENS CONTEST Sponsored by the FLOWER and GARDEN FOUNDATION, Box 357, Rosedale Station, Kansas City 3, Kansas I would like to enroll _____ members of the __ (Youth club or organization) in the 1961 Young America Gardens Contest. As adult leader I plan to supervise this group in their gardening projects and preparation of contest entries. Name_ Address Please send me the MATERIAL KIT containing full information and contest helps.



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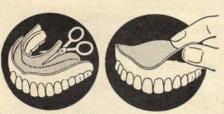
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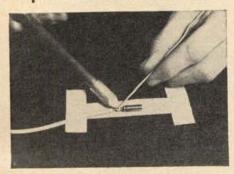
Damaged Screw Slot



When you have the problem of removing a screw with a damaged slot, try to get the screw at least 1/8 in. out, then hacksaw a new slot at right angles to the old. If the screw is far enough out before the slot breaks, the head can be gripped with clamp-type pliers and the screw turned out.

Daniel Bousha, Jackson, Mich.

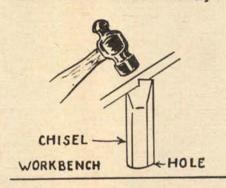
Tape is Small-Parts "Vise"

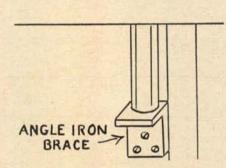


When you have some tiny metal parts to solder and lack a means for holding them while the solder is being applied, utilize the gripping ability of a strip of masking tape. Tape a strip of the tape (sticky-side-up) to the bench top as shown in the photograph and press the parts onto the tacky surface. You'll find that this is easier than burning your fingers on hot parts and that the tape won't drain away needed heat from the work. Use the "vise" also for holding tiny wood parts. John A. Comstock, Wellsboro, Pa.

WORKBENCH SHOP TIPS

Cold Chisel Bench Hardy





Projecting through your workbench top at one corner, a large cold chisel will provide an excellent cutter that can be slipped in place quickly when the occasion arises for cutting light material. The lower end of the chisel rests on an angle iron bracket screwed to the bench leg, as illustrated. You will find that this tool is most efficient in cutting small metal rods, sheet stock, etc., and due to it's easy removal, it is never in the way.

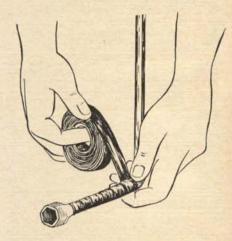
M. Robert Beasley, Detroit, Mich.

Easy Method for Ripping Long Boards

When ripping long pieces of wood on the power saw, it is difficult to hold the piece for the final few feet of cut unless a support is used back of the saw. In cases where such a support is not available, rip to the center of the piece, and then turn it over end for end and complete the cut. Using this method, one man can handle long pieces accurately and with no danger.

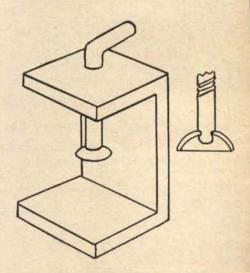
C. Wayne Close, Glendale, Oregon

"Insulated" Tire Tools



Changing a tire in below-freezing weather can be extremely unpleasant when cold tools stick to your hands. Prevent this by wrapping electrician's tape on the tools at the point where they normally are grasped. Daniel Bousha, Jackson, Mich.

C-Clamps for Model Makers



Model makers can produce any number of efficient C-clamps by sawing off sections of a length of steel channel and fitting them with clamping screws. The clamping screws can be a ¼-inch carriage or stove bolt, with the head cut off and the bolt bent to an L-shape. The threaded end is filed to form a tenon to take a cup washer, which is peened loosely to the bolt, providing the seat.

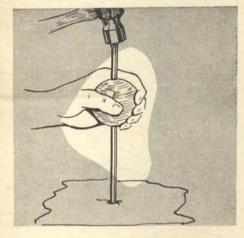
M. Robert Beasley, Detroit, Mich.

Bristle Brush Aids Wire Brush



If the bristles from an old paintbrush are wired to the end of a wire scratch brush, it can be used to reach into cracks and crevices and remove dust and paint chips when the scratch brush is used to remove loose paint. Ken Murray, Colon, Mich.

Star Drill Shock Absorber



Eliminate the stinging and shock your hand usually takes when using a star drill by boring a hole through a solid-rubber ball and slipping it over the drill. Position the ball toward the upper half of the drill to assure complete control.

Daniel Bousha, Jackson, Mich.

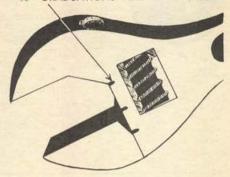
Stabilizing Lamp Base

A tippy, pottery-base lamp can be made relatively stable with sand. Remove felt bottom and fill hole with sand so that base is half-full. Plug hole with partially-melted paraffin wax, taking care not to spread it around rest of base. A rubber kitchen spatula can be your tool. Also plug around cord outlet on side. Allow wax to harden well, and scrape or file it flat with bottom. In upright position, glue entire bottom to felt or cardboard.

Diane Syme, St. Paul, Minn.

Wrench Jaw Marked

1/4" GRADUATIONS FILED OR ETCHED

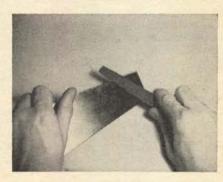


Time can be saved when setting an adjustable wrench if graduations 1/4 in. apart are filed or ground on the jaw. This makes it possible to set the wrench for a particular size of nut without having to try it for size several times.

Daniel Bousha, Jackson, Mich.

Before painting walls in any room, dust them thoroughly with a dry, clean cloth, or use a vacuum cleaner. Kitchen and bathroom walls should be washed.

For An Accurate Saw Cut



To prevent your handsaw from jumping the guide line and marring the work when first starting a cut, file several teeth thin at the starting end of the blade. The razor-sharpness of the thin teeth will "bite" into the wood starting the cut more accurately.

John A. Comstock, Wellsboro, Pa.

Layouts On Metal

An ordinary pencil or sharpened dowel can be used to make layouts on metal if the surface is prepared in this manner: First wipe it with a thin film of oil, then sprinkle on ordinary talcum powder. Shake off or blow away the excess. If the layout must withstand some handling, apply a thin coat of clear shellac over the drawing. It later can be removed with steel wool.

M. Robert Beasley, Jackson, Mich.



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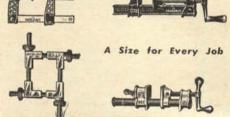
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Manufacturers' Directory

Rough-Water Cat, Page 12

Catamaran Kit, Taft Marine Woodcraft, 636-39th Ave., N.E., Minneapolis 21. Minn.

14-Ft. Fishing Boat, Page 12

Kodiak Fishing Boat, Aluma Craft Boat Co., 1515 Central Ave., N.E., Minneapolis, Minn.

Fiber-Glass Sailboat Page, 13

Cottontail Sailboat, Holiday Yachts, Inc., Centerport, Long Island, New York.

Tiki Catamaran, Page 14

Catamaran, Catamaran Corp. of America, 2324 Summit St., Kansas City 8, Mo.

Know Your Ropes, Page 22

Booklet "Know Your Ropes for Better Boating," Columbian Rope Co., Auburn, New York.

Kit-Built Houseboat, Page 24

Luger Industries, 9200 Access Rd., Minneapolis 20, Minn. Sunfish Sailboat, Page 25

Sunfish Sailboat Kit, Alcort, Inc., Box 1345, Waterbury, Conn.

Yacht Chairs, Page 25

Yacht Chairs, Telescope Folding Furniture Co., Granville, New York

Air-Cushion Boat Trailer, Page 26

Hull-Gard Trailer, Dana Corp., Parish Pressed Steel Div., Reading, Pa.

Make A Long-Legged Table, Page 36
Table Legs and Accessories, Jore & Co., 33-Ten Downing St., Flushing 54, N. Y.

Unusual Tools in the Model Shop, Page 40

Homecraft Radial-Arm Drill Press, Rockwell Mfg. Co., Delta Power Tool

Div., 400 North Lexington, Pittsburgh 8, Pa.

Atlas Jointer-Planer, Atlas Press Co., 1915-2023 N. Pitcher St., Kalamazoo, Mich.

AMT Table Saw and AMT Jointer-Planer, American Machine & Tool Co., Inc., Royersford, Pa.

Blind Fasteners, Page 46

Utility Plugs and Jack Nuts, Molly Corp., Reading, Pa.

Vinyl-Surfaced Wallboard, Page 51

"Durasan" Wallboard, National Gypsum Co., 325 Delaware Ave., Buffalo 2, New York.

Multi-Lamp, Page 52

Multi-Lamp, Moffatt Products Co., Inc., 3124 Washington Ave., North, Minneapolis 11. Minn.

DeWalt Power Shop Radial Arm-Saw, DeWalt, Inc., Lancaster, Pa.

Shopmaster Table Saw and Shopmaster Jig Saw, Portable Electric Tools, Inc., 1200 East State St., Geneva, Ill.

Wood-Grained Panels, Page 53

Masonite Panels, Masonite Corp., General Office: 111 W. Washington, Chicago

Ranch-House Dormer, Page 54 "Pentadorm," American Franchise Systems, Inc., 18415 W. Eight Mile Rd., Detroit, Mich.

Filigree Plastic Room Dividers, Page 55

Plastic Room Dividers, Bernard Edward Co., 5252 S. Kolmar Ave., Chicago 32, Ill.

Learn A Language, Page 59

Language Home-Study Course, Ottenheimer Publishers, 4805 Nelson Ave., Baltimore 5, Md.

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